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ABSTRACT

Presented in this volume are five papers on literacy in the Australian Aboriginal context. They include: "Cultural Considerations in Vernacular Literacy Programmes for Traditionally Oriented Adult Aborigines" (Joy L. Sandefur); "Characteristics of Aboriginal Cognitive Abilities: Implications for Literacy and Research Programmes" (W. H. Langlands); "A Suggested Strategy for an Alyawarra Literacy Programme from a Community Development Viewpoint" (Nancy J. Turtle); "Vernacular Literacy for Warlpiri Adults" (Beverly Swartz); and "Developing a Literature for Kriol" (John R. Sandefur). The first four papers underscore the need to consider psychological, sociolinguistic, and anthropological as well as directly educational factors. The fifth paper focuses on the growing importance of Kriol as an Aboriginal language. All five papers are intended for broad audiences, including lay audiences. (MSE)

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Series B Volume 6

LITERACY IN AN ABORIGINAL CONTEXT

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Series B Volume 6

LITERACY IN AN ABORIGINAL CONTEXT

Editor: Susanne Hargrave

SUMMER INSTITUTE OF LINGUISTICS
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PREFACE

These Work Papers are being produced in two series by the Summer Institute of Linguistics, Australian Aborigines Branch, Inc. in order to make results of SIL research in Australia more widely available. Series A includes technical papers on linguistic or anthropological analysis and description, or on literacy research. Series B contains material suitable for a broader audience, including the lay audience for which it is often designed, such as language learning lessons and dictionaries.

Both series include both reports on current research and on past research projects. Some papers by other than SIL members are included, although most are by SIL field workers. The majority of material concerns linguistic matters, although related fields such as anthropology and education are also included.

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Series Editor

INTRODUCTION TO

SERIES B VOLUME 6

Literacy in an Aboriginal context is a complex concern. As the first four papers in this volume indicate, factors that need to be considered are psychological, sociolinguistic and anthropological as well as more directly educational.

The fifth paper is of a different mode but it too presents a factor for the literacy worker to consider — the growing importance of Kriol as an Aboriginal language. Whether one considers it a simplifying or complicating factor, it cannot be ignored.

All of the contributors are SIL field workers who themselves face the challenge of literacy in an Aboriginal context.

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CULTURAL CONSIDERATIONS IN VERNACULAR LITERACY PROGRAMMES FOR TRADITIONALLY ORIENTED ADULT ABORIGINES

Joy L. Sandefur

0. INTRODUCTION

Literacy is a new thing for the traditionally oriented Aboriginal. It involves concepts and skills that are different from anything that he has previously learned. Often the person who starts a vernacular literacy programme for adults is a European and his problem is how to adjust his teaching so that it is as culturally relevant to the traditionally oriented Aboriginal as possible. The method that he chooses to teach reading and writing should be adjustable to the situation and one which Aborigines can master and use to teach others.

The traditionally oriented Aboriginal who wishes to teach reading to his fellow tribesmen will not be able to draw on his Aboriginal background alone. Skills such as the association of sound and symbol and the deduction of meaning from abstract symbols representing sounds are foreign to him. For his understanding of the skills used in reading and writing he will have to draw on the methodology of the European. The Aboriginal teacher will be able to make a unique contribution in areas such as how letters, words and grammatical units can be described in his language. Aboriginal teachers who understand the skills involved in learning to read will be the most suitable persons to work out an Aboriginal way of teaching others. Yet the European can make his own teaching of Aborigines much more effective by taking cultural factors into account.

As the title indicates, this paper is concerned with vernacular literacy for traditionally oriented adult Aborigines, the area of literacy work in which I have had experience. I have assumed in the paper that the decision has already been made that a literacy programme (and the changes it could bring) is desirable, and also that a literacy method has been chosen.

My discussion of the topic is as follows. Firstly I discuss the traditional Aboriginal way of life as 'being' as opposed to 'doing'

and the implications of this view for literacy and education. The fact that some Aborigines are moving away from this towards acculturation of western values is also covered. Then facets and methods of traditional education are discussed.[1] This is followed by an endeavour to apply traditional Aboriginal teaching methods to the teaching of literacy skills. Finally I cover a number of other cultural factors that I see as being relevant to a successful literacy programme.[2]

1. TRADITIONAL ABORIGINAL VALUES

Margaret Bain in 'Aboriginal Attitude: "Being" Rather Than "Doing"' suggests that the essential difference between Aboriginal and European ways of life is that the Aboriginal approach is based on 'being' rather than 'doing'. 'Before the coming of the whiteman, the major factors in the life of Aboriginals were the community, and the land, in which he dwelt. He existed in a state of being in relation to both, that is he was consciously and essentially "of" them and received from them. In corroboree this became reciprocal' (1969:1).

Margaret Bain goes on to suggest that the Aborigines are perhaps unique in this way:

> I have come to the conclusion that rules which apply to other peoples do not necessarily apply to the Aboriginal. This has come about because the Aboriginal alone (and perhaps the Bushman of South Africa) through force of circumstances, is one who receives and not one who works and then receives in terms of that work. His contribution towards receiving from the land was through corroboree, by which he co-operated with the mystical forces associated therewith and so, for example, brought about increase in the various species of plants and animals. He received, therefore, not as a result of the manipulation of physical things, namely by works, but as a result of quite a different action, essentially in the realm of religion, or belief.

The skills and knowledge necessary to hunt and gather food successfully had to be learnt by each generation. But the food itself was not seen as a reward for the energy expended to acquire it.

Aborigines are community dwellers and they are also interdependent over large areas. Religious matters were one area of interdependence. Corroborees, particularly initiation corroborees, could call for participation by Aboriginal people over a wide area. This implies a common sharing of religious beliefs. Aborigines also share interdependence in land rights. 'His relationship to the land

is in the nature of being of it (intransitive) rather than owning it in the European sense' (Bain 1969:2). Many parts of the land have significance for him and his religious beliefs, e.g. a sacred site at Looma is significant for people as far apart as Christmas Creek, Fitzroy Crossing, Derby and LaGrange.

The attitude of 'being' and an interdependence on each other has important implications for the traditional Aboriginal view of education.

> For a stable community interdependence requires conformity over that area too. This in turn precludes the possibility of individual advancement or change, without opting out of the community. Such interdependence and resistance to change implies a particular attitude to learning and also dictates a particular type of education, i.e. one aimed at maintaining the status quo geared to prevent individual thought and requiring acceptance of the content of the teaching in entirety. (Bain, p. 2)

This traditional attitude of resistance to change is given some support by John L. M. Dawson. Dawson (1970) undertook a study to analyse the origin and structure of Aboriginal attitudes towards education and integration and to see if particular variables were influencing the formation of these attitudes. He studied two groups in New South Wales: one was an urban group of Aborigines living at Green Valley and the second group was a more traditionally oriented group living at Wallaga Lake. He found that the Green Valley group had more favourable attitudes towards education than the Wallaga Lake people, but not such a marked difference of attitude to integration. 'Wallaga Lake subjects agree significantly more than Green Valley subjects that it is not a good thing for one Aboriginal to do better in the modern world than other Aborigines. This apparently culturally determined attitude relating to group cohesiveness is detrimental to integration as it limits movement of an individual away from the group in terms of educational and occupational achievements.' Dawson also says that it was not possible to determine whether this group cohesiveness was 'culturally derived, a function of minority groups reward-cost outcomes, or due (in the case of the Wallaga Lake sample) to a certain degree of isolation, or again an interacting process involving all three factors' (p. 112).

He concluded that the general trend of his findings 'indicate that certain aspects of traditional Aboriginal culture are adversely influencing the development of attitudes towards education. Where urbanisation processes are in evidence - mainly among the Green Valley subjects - these are nearly always associated with the

development of more favourable attitudes. It was not always possible to determine whether the origin of an attitude was due to cultural influences, minority group co-hesiveness, or economic factors' (pp. 114-15).

Dawson's work seems to support Bain's suggestion that if an Aboriginal who is a member of a traditionally oriented group wishes to accept a new way, he must go against the group and opt out of it. It is not culturally acceptable to be individualistic and succeed in a new and different sphere. The whole attitude of Aborigines to life and education is in contrast with the European view. To the Aboriginal the group is important and maintaining it is an important value. The European view focuses on the individual. Dawson's conclusion suggests that you cannot change an Aboriginal's approach to education unless you urbanise him, i.e. make his way of life the same as ours. The people living at Green Valley who had been exposed to and influenced by urbanisation were more inclined to see the education offered by the European schools as having value.

Bain says that given the Aboriginal understanding of education, 'the European type of teaching may not be understood at all. Education, training, with an objective, which is perhaps even out of sight, education for change, is not always apprehended' (1969:2). For the traditional Aboriginal, learning to read and write might well be seen as having no relevance. He may see it, rather, as a threat to the status quo, making those who learn to read different to others.

Group cohesiveness amongst minority Aboriginal groups is such that if the group as a whole can see no advantages in western education, group pressure will work against a child excelling at school. If a child chooses to excel at school and pursue western education, he is in effect saying that he prefers the new way to the old way that the tribal group regards as right and proper. Children who do so are the exception.

Tribal Aborigines are prepared to accept change to the status quo if it benefits the whole group, and will then press for schooling for their children. When this happens, reading and writing should be linked to short term benefits such as writing letters when absent and reading enjoyable material.

2. MOVES TOWARD EUROPEAN VALUES

Today not all Aborigines are traditionally oriented. Studies are showing that some Aborigines who have had long contact with white people are assimilating some of the European values. As mentioned above, Dawson found that the urbanised Aborigines had more favourable attitudes to education than non-urbanised Aborigines. This

would suggest that they have been influenced by European ideas and values. To them a European type of education would not be as irrelevant as to more traditionally oriented Aborigines.

Betty Watts has found evidence of some acculturation towards 'doing' by Aborigines, but the change is incomplete. She explored achievement motivation among Aboriginal girls through a comparison of achievement related values expressed by Aboriginal mothers and their teenage daughters, as well as white mothers and daughters. Interviews were from four areas in Queensland — a white urban area, white rural area, an isolated Aboriginal settlement and an Aboriginal settlement in communication with nearby white communities. She concluded that 'research data would suggest that there is evidence of acculturation of the Aborigines in regard to certain value orientations, but that they have not reached the stage yet where positions on these orientations are as strongly held as they are by the dominant white group. Perhaps the relatively less marked preference for achievement-related values helps to explain their lack of social mobility' (1970:110).

A. K. Ekermann (1973) has also done some research on value orientation. He tested an Aboriginal community (unnamed) where only 4% of those interviewed had had no schooling. Based on the results of his research, Ekermann came up with some conclusions that are contrary to the usual descriptions of Aboriginal values, as given by Elkin and other anthropologists:

1. Aborigines have been described as strongly past and present oriented; the group studied by Ekermann showed a future over present over past orientation.
2. Ekermann's results showed a markedly individual orientation, not the collective orientation usually ascribed to Aborigines.
3. Aborigines are commonly described as a people who see themselves in harmony with nature. Ekermann found just as much indication that they see themselves in subjection to nature and also in mastery of nature. In short, there was no clear predominance of any of these three orientations toward nature over the other two.

All of this seems to suggest that in some places at least, if not in all Aboriginal communities, there is a shift from 'being' towards 'doing'. This could well mean that in many places in Australia literacy skills will be taught to Aboriginal communities that no longer are firmly rooted in traditional values. However, I would expect that very few Aborigines will have completely rejected 'being' for 'doing' in the near future. The value of

'being' is probably still very important. In fact, the only adjustment made by some Aborigines is recognising that the white man is now a dominant factor in his environment.

In the past, Aborigines met their needs through hunting and gathering what their environment offered. Now they tend to 'hunt and gather' from the white man. The position of the Aborigines who are still markedly traditionally oriented is well summed up by Margaret Bain when she quotes an older Aboriginal man at Finke: 'The white man has a secret and he won't tell the Aborigine what it is' (1969:5). She goes on to comment, 'In the conflict between two societies, one based on "being" and the other on "doing" it is not surprising that such a statement should be voiced, for "doing" is the secret'.

When thinking of how to start a literacy programme, it would be well to try and assess if the dominant value still is 'being' or if there is a shift toward European values. This will affect how one would introduce literacy and seek to motivate potential readers. If 'being' is still the dominant value, it could well be that little benefit will be seen in learning to read. By learning to read, a person will be moving away from the status quo for his group and showing individualism. However, in some situations individualism will be seen as totally acceptable if the person's skill benefits the whole group. At Ernabella the acceptance of literacy was facilitated because it could reinforce the 'groupness' and emphasise the value of their one language. As Ernabella people moved to Finke, Alice Springs, Amata, Indulkana and Fregon, written communication helped to maintain group unity (Hart, personal communication).

Exposure to schooling may help <u>or</u> hinder vernacular literacy programmes. It may provide opportunity to see how Europeans benefit from reading and writing and thus give incentive for gaining the same skills or the attempt to read and write English may be such a failure that the Aboriginal person has no heart for attempting vernacular literacy. Each situation must be assessed to find out what value is seen in reading and what is the best way to motivate people.

3. TRADITIONAL ABORIGINAL EDUCATION

3.1 APPROACHES

Gatjil Munyarryun from Yirrkala says (1975) that traditional education was based on the four senses: seeing or imitating, touching, smelling and taste. Munyarryun omits hearing from this list, but Max Hart comments that this was also a means by which Aboriginal children were taught. He observed that the word '*Kulila* was always used by the Pitjantjatjara people of Central Australia to indicate that people were to "listen" and take note of what was about to be said' (Hart 1974:1).

From other observers of Aboriginal culture, we learn that prior to puberty Aboriginal children were mainly taught skills for coping with their environment, such as tracking. This training responsibility was undertaken by parents or other adult relatives. After puberty, more serious or harsh training took place and the tribe or tribal elders assumed the role of teacher and authority (Montague 1937:124-5; Malinowski 1963:268). Young Aboriginal children were given a free hand and rarely if ever were they chastised for disobedience. This situation is very different from what the children usually encounter in a European school room, where they are enclosed by four walls, expected to be still for long periods, and must speak only in a foreign language.

In his book *Kulila*, Max Hart devotes a whole chapter to the subject of traditional education and the educational methods used by Aborigines. Hart refers to Dr Penny, who in writing about tribal education showed that

> Aborigines aimed to transmit their living culture to each succeeding generation, not indiscriminately, but to those young people willing and able to receive it. Their purpose was to maintain and to develop the whole community, not just to develop individuals within the group. The emphasis was much more on the welfare of the tribe than on the success of any particular person within it. Also it is evident that Aboriginal education was not so much a preparation for life as an experience of life itself. It was not concerned with piling up credits, certificates or degrees for a possible position in the future, but with experiencing and enjoying life at the present time, in childhood, in youth and in adulthood. (Quoted in Hart 1974:8)

This is in agreement with Margaret Bain's comments, referred to earlier, about the group being the important thing.

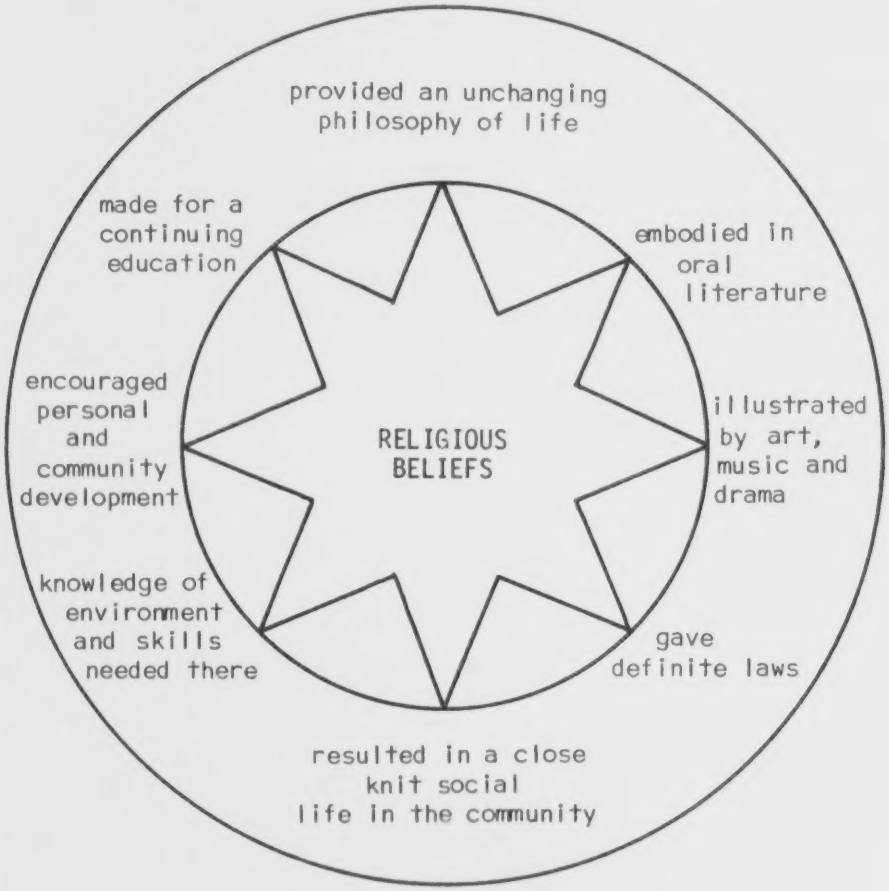
Hart sees many different facets of Aboriginal education with every facet centred around religious beliefs. There was no secular education as such. The permeating force of their life was religion. Food gathering, geography and social life are all connected with religious beliefs.

> From the belief in their spirit ancestors came their cosmic philosophy of how the earth they knew was formed. Their <u>dreaming</u> also gave purpose and relevance to their own life and that of their communities. This philosophy was not unfolded all at once through their education, but was gradually realised and understood from the time the child heard its first story, throughout the whole of initiation, and developed as the individual became more mature. (Hart, p. 9)

The following diagram, taken from Hart's book, shows Aboriginal education as a circle. 'It was life itself, a unity of experience', not a formal division into subjects as in our European schools.

FIGURE 1

FACETS OF ABORIGINAL EDUCATION (Hart 1974:9)


provided an unchanging philosophy of life
made for a continuing education
embodied in oral literature
encouraged personal and community development
RELIGIOUS BELIEFS
illustrated by art, music and drama
knowledge of environment and skills needed there
gave definite laws
resulted in a close knit social life in the community

This education went on for the whole of life. It was not just a preparation for life, it was life itself: 'It prepared the child for the life he was to lead, trained him in economic pursuits, gave him the necessary social ability, and helped him to adequately enjoy his leisure' (Hart, p. 13).

3.2 METHODS

After dealing with the facets of Aboriginal education, Hart describes a number of successful teaching methods that were used by Aborigines. One method was the existence of a strong personal relationship between the teachers and pupils. A child knew every adult in the camp and identified with them. At the time of initiation the boy entered into a special relationship with older teachers. He called these teachers *tjamu* and they called him *pakali* (in the Western Desert group). Girls entered a similar relationship with an older woman who was held responsible by the community for her pupil. The girl called this woman *kuntili* and *kuntili* called her *ukari*.

Hart explains a little more of how the relationship between the boy and his teacher was carried out. Working from a close personal relationship, the *tjamu* would take his pupil away from the camp and instruct him in an outdoor setting. When Hart visited one of the 'schools' run by the *tjamu* he observed that 'It was very noticeable that the boys were most obedient to the teachers, a very different degree of interest and attention was manifest in the outdoor setting from their attitude inside the schoolroom' (p. 14). On another occasion when a young woman teacher took a group of girls outside to get photographs and a story for an English reader, she was surprised at how the girls lost their shyness and became far more communicative. Aborigines are more at home outside and often feel inhibited when inside buildings such as a schoolroom.

The *tjamu* was also responsible to teach his *pakali* about areas outside the local area which would be visited for the purpose of trade and special corroborees. Stories of the origins of sacred sites and waterholes would be told. Location of waterholes and where to find different foods would be taught. The *pakali* would also learn from meeting different people. Participation in corroborees at these different places would highlight the common area of their beliefs. Thus travel was an important method of education.

Educational activities were related to the environment. For this reason the education of coastal people would have differed from that of the desert people. On the coast, kangaroo skins were used for the making of rugs and cloaks, whereas in the centre of Australia no kangaroo skins were used for totemic reasons. Thus environment had a big effect on the practical education of tribal members.

Practical experience was another successful method of instruction. A child learnt by observation and imitation how to make spears, hunt, perform religious ceremonies, cook, etc. If he failed in his attempt at the skill, then he would observe even more carefully

the next time. Repetition was an important part of learning. A craftsman, when teaching someone how to carve, might have to repeat a demonstration several times, but each time the demonstration would be repeated in a slightly different form.

Repetition was important in other areas of learning, too. Meggit says of the Warlpiri, 'although a man has seen all the ceremonies and ritual objects by the age of about thirty, he does not as a rule understand the religious significance of all of them; and he continues to acquire this knowledge slowly from his seniors, until he is an old man and is competent to teach others' (1962:235). Hart maintains (pp. 17-18)

> the deeper meaning of these ceremonies involving their philosophy and religion would only be gradually understood by the repetition of them throughout life . . . In the ceremonies themselves the tunes and rhythm of the songs are repeated with slight variations and increments and lines or words are repeated and slightly varied. It is not a method of useless and boring repetition but a repetition of what is to be learnt combined with some interesting new feature; it is a repetitious and incremental method which prevents boredom and yet insures that the learning takes place.

Another important means of helping Aboriginal children to learn was through challenge to their endurance. This meant that by the time boys were ready to be initiated, 'the challenge of their ordeal was met, as Strehlow noted, with keen expectancy and true fortitude. They were determined to meet the challenge of suffering with courage and prove themselves men. Provided this challenge was tempered to their capabilities, they were ready to endure pain and hardship to achieve the status of manhood' (Hart, p. 18).

To sum up, traditional Aboriginal teaching methods, as described by Hart, were the development of a strong pupil-teacher relationship, use of the outdoor environment, learning through practical experience, suiting the curriculum to the environment, using travel as a means to education, encouraging the development of powers of observation, repetition with careful variations and presenting a challenge to the learner. These methods were successful in the traditional environment. As very few Aborigines are now living in a totally traditional environment, we need to assess which of the above methods could be used in a literacy programme.

4. TRADITIONAL EDUCATION AND LITERACY PROGRAMMES

The skill of reading and writing is a foreign skill to Aborigines. There was little that was akin to it in their culture. Some tribes have a certain number of pictorial symbols which have meaning, and these symbols can make an excellent starting point for literacy. The following are two Warlpiri symbols (Hart, personal communication):

represents *malu* (a red kangaroo)

represents *kalaya* (an emu)

The Aboriginal skill of tracking might seem a starting point for learning to read. Both skills require careful observation of 'marks' to get correct information. An Aboriginal can tell from a kangaroo track how big the kangaroo was, whether it was wounded or had something unusual about it, how fast it was travelling, in what direction it was travelling and how old the track was. Yet this is rather different from learning the letter symbols of an alphabet, that the letters arranged in one sequence symbolise a certain word of speech while a different combination of the same letters symbolises something different, and that a word must always be read from a certain vantage point, i.e. left to right and right way up.

As reading and writing are foreign skills for the Aboriginal, the method used to teach literacy must be chosen with care. It could be an eclectic method as put forth by Gudschinsky (1972), a Breakthrough to Literacy approach (Mackay and Thompson 1970), a phonic method, or another. No matter which method one chooses, it will involve the teaching of concepts that are foreign to Aborigines. In this situation the question is how can the teaching of literacy skills be carried out in as culturally relevant a way as possible? As far as I know, no one has developed or discovered an 'Aboriginal method' for the teaching of reading and writing as opposed to western methods. Yet we can incorporate many aspects of traditional Aboriginal education.

4.1 TEACHER-PUPIL RELATIONSHIP

The traditional teacher-pupil relationship should probably be capitalised on, which will mean fairly small classes. Walmatjari adults have told me that their way of doing things is in small groups: 'It is not good to have large classes.' It has been my

experience that adults learning to read and write in their own language desire to develop a strong teacher-pupil relationship. If little individual attention is given, it is likely that the pupil will lose interest and stop attending the class. Aborigines should be trained to teach other Aborigines how to read and write in their own language, just as soon as it is possible, in an adult vernacular literacy programme. Aboriginal teachers will be able to make good use of the traditional teacher-pupil relationship in their teaching.

Because some relationships do not permit a teacher-pupil relationship, e.g. a son-in-law cannot teach a person in mother-in-law relationship to him, it is important that teachers are from more than one skin group, so that all may have the opportunity to learn. It would be more culturally acceptable if men were taught by men and women by women.

4.2 OUT-OF-DOORS ENVIRONMENT

With traditionally oriented adults, I have found the most suitable place for a class to be outside. The adults feel uncomfortable and ill at ease when surrounded by four walls. Outside, sitting on the ground in the shade of tree or bough shade, they are far more at ease and relaxed. When a literacy class was started at Fitzroy Crossing for Walmatjari women, the class was held inside a house for the first two weeks because of the wet weather. Then the class moved outside to a bough shade and the pupils were noticeably more comfortable. At Looma the breezeway of a house was regarded as an acceptable alternative to sitting in the shade of a tree. Working out-of-doors will limit the amount of blackboard space and the kinds of teaching aids you can use, but adaptations can be made. If the pupils feel more comfortable and secure, it is worth the effort involved. I certainly found it worth the effort. (You may find, however, that in some places a classroom has come to be regarded as the 'proper place' for literacy instruction, and you may need to at least start your sessions inside for community acceptance.)

4.3 PRACTICAL EXPERIENCE

The traditional method of learning through practical experience is certainly applicable. It is only as the pupil tries to write that he will learn to write. The teacher explains the way a letter is formed by describing what he is doing as he writes the letter on the blackboard. He then has the pupil try to write it from memory. The pupil is actually mimicking the teacher in learning how to write. He is watching and then trying to do it, in just the way he has learnt to do so many other things. The process is repeated until the pupil can write the letter from memory.

Learning to read is more abstract and involves the ability to recognise graphic symbols, decode them and recode them as words and sentences with meaning. This is a foreign skill. In the past Aborigines have had spoken language and a complicated sign language. Written language has been described to me by Skipper Jangkan of Looma as a third method of communicating. Aborigines can interpret complicated designs engraved on shields, etc., but this is probably closer to pictorial representation than the kind of graphic representation we have for those sounds that make up an alphabet. The skill of reading can only be achieved through experience. For the Aboriginal it is a more abstract kind of experience than he is used to and foreign to his traditional way of life. It is a new kind of experience to sit in a class and learn to understand what letters and words are all about.

4.4 ADAPTING TO THE ENVIRONMENT

The environment will probably influence when classes are held, both as to time of day and which season. What we might think is a suitable time could well be regarded as unsuitable by the Aborigines. I used to think the wet was a good time for the Walmatjari but it turned out that the dry was better. During the wet season large numbers of Aborigines gather at Fitzroy Crossing for several months. Little work is available on cattle stations and the wet is regarded as holiday time. Corroborees are also held during this time and people tend to move from one centre to another for ceremonies and to visit relatives. The result is that people are too preoccupied with ceremonies and with visiting and entertaining relatives to include regular literacy classes in their activities. The dry season when there are not as many distractions was the better time.

Another way that we can adapt to the environment is in the teaching of writing. For some Aborigines, e.g. Western Desert groups, it will be most helpful if all the directions for writing a letter of the alphabet were given in terms of north, south, east and west, and up and down. This is the way they are used to giving directions and to orient to this in teaching writing is most helpful. In these ways the literacy programme can be adapted to the environment and the people.

4.5 TRAVEL

Traditionally Aborigines used travel as a means of education. These days Aborigines still travel, and visits are made to other places for weeks and months at a time. Perhaps the best use that could be made of this method would be to go somewhere with a group and then have them write a story about it. Also people could be encouraged

to write stories of places they have visited when they return home. It might be beneficial to occasionally camp out with people and have an intensive time of teaching literacy skills away from the demands of daily life.

4.6 OBSERVATION

Development of the powers of observation was a very important teaching method used by Aborigines. Learning to read and write fluently requires more than observation, but observational ability can be utilised in learning to recognise the graphic symbols that are needed for decoding skills in reading. Observational ability could be utilised if one was to teach reading solely by means of sight words. It seems to me that Aborigines have a strong urge to learn this way. This is how they learn tracking and nearly everything else that they do. The adult Aboriginal will tend to look at a word and then try to memorise it, but the memory load soon becomes too heavy. Furthermore, the sight word approach does not provide word attack skills for coping with unknown words.

Even though a student can use his skills of observation in learning new symbols, he still must learn the link between sound and symbols and the relationship between groups of symbols. This is the most difficult part of learning to read for adult Aborigines.

4.7 REPETITION

Often in the teaching of literacy it will be necessary to repeat something that was in the previous day's lesson. Here we need to follow what the Aborigines did and repeat the lesson but with variation. If it is still not fully grasped, it needs to be repeated again but in a different way until it is understood. This approach will avoid boring repetitions that soon dull any interest.

4.8 CHALLENGE

Learning to read is a big challenge for an adult and the primer material must be carefully graded in its progression to preserve this challenge, with some new words in each story and the stories gradually becoming longer. However, we do not want to make learning to read and write an endurance test. If we do, nothing will be gained and a lot of harm done as no pleasure will be gained from learning to read. It will take real skill to make sure that the lessons are stimulating and that progress is at just the right speed.

5. OTHER CULTURAL CONSIDERATIONS

So far I have restricted myself to dealing with Aboriginal teaching methods as described by Hart. However, there are a number of other factors that should be considered if we are to make literacy as relevant as possible. These include kinship, content of literature, illustrations, teacher's guides and teacher training.

5.1 KINSHIP

Kinship and social groupings are a very important part of Aboriginal life for they define how Aborigines relate to each other. The young child soon learns that with certain people he can have a joking relationship, others he must always be serious with and still others are to be avoided. For example, mother-in-law and son-in-law avoidance is commonly practised. The two avoid each other and never speak to one another. This kind of relationship can cause problems in a class if a boy and girl in this classificatory relationship are seated together or asked to work together.

R. M. Berndt (1965:8) has the following to say in reference to children at school:

> The section and subsection systems, along with the traditional kinship systems when they are operative, influence a child's response in a school situation: for instance, where he or she sits when allowed to choose, how he or she co-operates and participates with certain other children, and so on. Even in 'sophisticated' areas this still has a bearing on children's responses.

The same is true of adults. If a potential pupil is in an avoidance relationship with the teacher, that person cannot be a pupil in that class. Sometimes the relationship can be manipulated or changed to an alternative one so that the pupil can attend. On one occasion a Walmatjari young man who wanted to learn to read Walmatjari used an acceptable alternative kinship term to relate himself to the European teacher who had been given a skin grouping. This allowed him to talk with the instructor and be taught by her. I think it would be very unlikely that a relationship between Aborigines in the community would be readily changed in the same way. This highlights the need that any teachers that are trained should belong to different skin groups or social groupings. Otherwise there could be a whole section of the community unable to attend classes because of kinship pressures and restrictions.

A knowledge of the kinship terms and the kind of relationship you can have with each person in a certain kinship category can be very helpful. Among the Walmatjari it is customary to address a person by the kin term that describes his relationship to you. If he is a grandfather or a brother-in-law then you address him by the appropriate relationship term.

Proper names are rarely used, and if a teacher insists on using them it may be considered very disrespectful by adult Aborigines. If you know what kind of a relationship goes with each term, then you know whether a person should be addressed respectfully or not at all, or if a joking relationship is permitted. Also you will know whether your relationship permits you to correct a person when he makes a mistake.

Another important relationship that comes under kinship and social groupings is that of men and women. It could be very unwise to mix men and women in one class, as the two groups are never in competition with each other. Also it is very uncultural for a woman to do better than a man. On Croker Island, as a boy approaches puberty and manhood it is common for him to drop out of school, so that by the age of 12 most boys have left school. It is just not culturally acceptable for boys and girls to be in such close contact with one another at that age (personal communication, B. Larrimore). It is also wiser for adults to be taught before children. In Aboriginal culture it is unheard of for children to know more than their elders. If children are taught first it is likely that the adults will have little or no interest in acquiring literacy skills and could come to regard it as 'kids stuff'. The wishes of the community should be sought in regard to who is taught first to read and who is trained as teachers.

5.2 CONTENT OF LITERATURE

A good literacy programme will have a number of books printed in the vernacular before a full-scale literacy programme is started. If this literature is going to stimulate interest in learning to read, then it must appeal to them and satisfy needs which they feel. For some of the Walmatjari, portions of scripture printed in their own language have been the great motivation for learning to read. Personal experience stories of life in the desert, on cattle stations, or adventures on hunting trips have also been popular. Until there is someone who can write such stories in their own language, it will be necessary to record and transcribe stories. But the question is, what kind of stories?

Ann Cates, from her experience in Papua New Guinea, has written up fourteen different ways to find out what people want to read (1973). Helen Marten gives a summary of these fourteen guidelines in her

article 'Keeping Literates Literate' (1974:112) and I quote this summary below:

1. Record historical events, listing facts, figures and names, and then see which things the people talk about most.
2. Record oral literature — stories, poems, chants, songs. Which do they like best? Note distinctive stylistic features.
3. Talk with village authorities on oral literature. Ask who tells the best stories, who knows the language best, who knows the tribal history best. Ask these authorities what the people like to hear the best. Even ask what to ask about — 'I want to know about *sing-sings*. What should I ask about?'
4. Note humour — the plight of others is a popular theme.
5. Note conversation. What do people talk about? In the Atzera language group, food, money, family and the past were the most popular topics.
6. Note questions people ask. What do younger people ask older people?
7. Ask people what they want to read. The first time people are asked what they want to read, they may not be able to answer because they may have nothing to base their judgments on.
8. Observe reactions to books shown.
9. Note what books people choose to read from libraries or buy in the markets. (The cover may have a strong influence on the casual reader.) What books do people buy in the trade language?
10. Observe reaction to pictures. Observe as they read magazines. Test interest by showing pictures. (In one SIL programme the men were more interested in things outside the culture than women.)
11. Observe the culture. What are some of the special skills? Do people want old stories and customs recorded?
12. Note tribal emphasis on needs (physical — food, recreation, sex; psychological — acceptance by the group). Provide literature that satisfies group consciousness.
13. Note the problems from their point of view. We may see problems that they don't see. Generally people will not accept literature on a topic until they see the need for it.

14. Note what the literates read about. The Atzera people wrote bird stories, football game reports, legends, humour stories, etc. They wrote both fact and fiction.

Helen Marten concludes her article by saying, 'One of the major goals of a literacy programme should be to develop tribal literature. Teaching reading is only part of this goal. The literature that is developed must contain that which satisfies the felt needs of the indigenous people themselves. It must have the flavour of the local culture and it should be authored by a member of the culture.' (See Kondo and Wendell 1970 for another useful article on the kind of reading material that will motivate people.) If we want Aborigines to be enthusiastic about reading, we must produce the kind of literature that they will want to read.

If the reading material is to be acceptable it must also be linguistically sound. The language must feel natural when read. This can be achieved through use of idioms, common vocabulary and natural-sounding sentences. The best way to achieve this is to have native-authored material.

5.3 ILLUSTRATIONS

Illustrations can add to the attractiveness of a book, help teach a keyword in a primer and be a useful teaching aid. However, pictures should be selected carefully, otherwise the picture might be conveying a message that is very different to that of the written message. Hail Duncan (1962:5) mentions a primer in a West African language where the text read 'falling on the ground' but the illustration showed 'falling from the roof'. The precise meaning of the verb used in the text was not made clear to the illustrator. This mistake was very confusing for the reader.

Duncan also points out the importance of knowing the reader. How will he react to the illustration? How much will he be influenced by the artistic conventions of his own people? What kind of attitudes and predispositions does he have that will influence his reactions to the illustration? Does he perceive depth when looking at a picture? How does he see fore-shortening?

> In a series of tests on how Africans see the human form in a drawing, we found that in such things as health posters that one would have to be careful in showing the limbs of the body with excessive fore-shortening. A good example of this is showing a picture of a healthy person in full front view. Fore-shortened feet appear as stubbs to some Africans. Think of the confusion confronting such a person as he reads the text about a healthy person. (Duncan 1962:21)

Duncan's book contains some good guidelines for choosing illustrations.

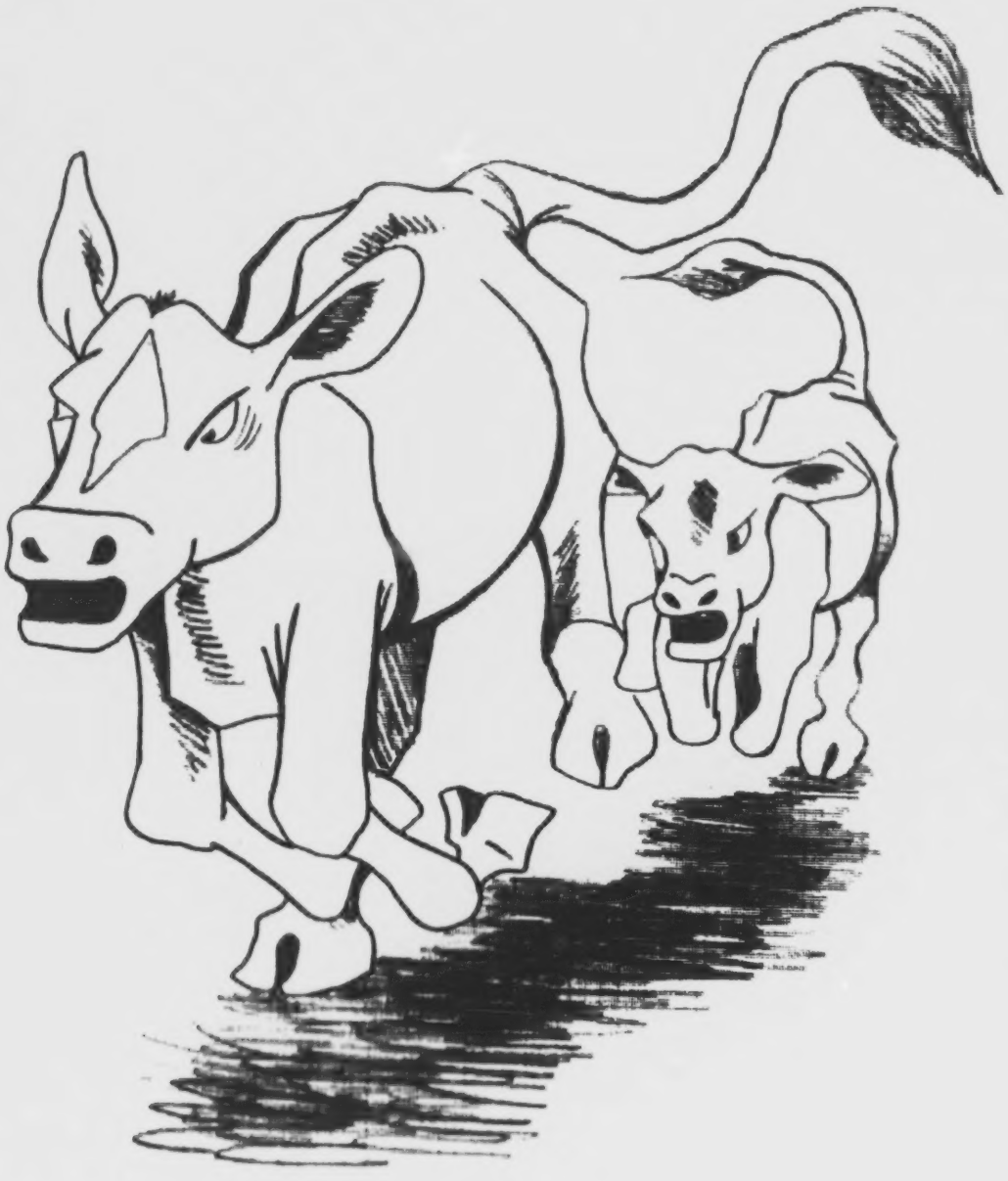
Alan Healey (1974) supports the views expressed by Duncan. Although Healey refers to one experiment in West Africa that indicated that improvement in depth perception is possible with three months training, he raises the point (pp. 142-43) that 'to train school children in the conventions of western pictorial representation is not the only approach that can be taken in developing nations . . . in fact why not encourage local artists to do the illustrating for posters, primers, readers, other primary school books, adult education booklets and Scripture translations?' It is my opinion that this is the way we must go if our literacy programme and materials are to be as culturally relevant as possible.

John Sievert (1970:20) refers to a test that was carried out in Papua New Guinea to discover which of the following was preferred:

a) photographs,
b) three dimensional drawing,
c) a predominantly black reverse or scratchboard,
d) a two dimensional outline drawing with an additional colour added,
e) a single colour two dimensional outline drawing or
f) a stick figure.

Among other things, photographs were shown to have a high prestige value in Papua New Guinea. Roy Gwyther-Jones (1971) has written on the results of another test that was conducted in Papua New Guinea in 1970. In both these tests, the results are applicable only to Papua New Guinea but the tests could probably be adapted to determine the preference of Australian Aborigines.

It is wise to always test your illustrations before they are printed, and this is especially so if they are drawn by a European. Some illustrations that had been drawn by a European artist were tested out before being printed. A copy of some of the pictures, what each represented and how each was perceived by the Walmatjari is set out on the following pages. (This information was provided by Eirlys Richards, an SIL fieldworker with the Walmatjari.)



This illustration represents a mother and calf running. The Walmatjari thought the cows were lying down chewing their cuds. The position of the front legs indicated this.

In this picture the cows are lying dead beside a dried up waterhole. The Walmatjari thought that the one behind was drinking milk from the front cow. There seemed to be nothing to indicate that they were lying down. It was also thought that the one behind had just been born.

The man on the horse was chasing the two cows and using a rifle to shoot at them. The rifle was not obvious to the Walmatjari.

In this picture the cow is lying down in the shade. It was thought to be a mule because of the ears lying back, the shape of the ears, and because of the beard (dark line under the chin mistaken for a beard). Also the Walmatjari thought it was in running motion.

Once these pictures were adjusted they were happily accepted. As the perspective of traditionally oriented Aborigines is very different from that of Europeans, it was just as well the above pictures were checked. However, it is so much better if an indigenous artist can draw the illustrations.

5.4 ABORIGINAL TEACHERS

If a literacy programme is to be culturally relevant and not just another white man's 'thing' it will be important to have Aborigines doing the teaching just as soon as possible. This means having a teacher's guide available for them to use. Anne Cate's article (1973b) would serve as a good starting point for anyone planning a teacher's guide.

Teachers will need to be chosen with care. They must be acceptable to the community. As mentioned earlier, it is desirable that they should be from different skin groups or social groupings. You might need to train women to teach the women, depending on what the community feeling is about women teachers. If you train women as teachers, it may be necessary to have a separate training session for them. The trainee teachers should be able to read and write fluently in the language they are to teach in. If they are going to be successful, the training programme needs to be long enough to give a thorough training in the teaching techniques they are to use. This kind of teaching will be foreign to the traditionally oriented Aboriginal, and he needs careful training if he is going to be able to carry it out with confidence. Then there should be adequate supervision and encouragement to assist the new teachers where needed so they are not left to flounder and become discouraged. The supervisor needs to be always on the lookout to see in what ways the teachers are adapting their teaching to meet Aboriginal needs. Many improvements in teaching patterns can come from this. The supervisor should always be alert to see if any of the teachers are evolving a truly cultural way for teaching reading that produces results. Such a discovery would be extremely valuable. The sooner the teaching of literacy skills is done enthusiastically by Aborigines, the more likely it will be seen as relevant by potential readers.

For group-oriented traditional Aborigines, we should not try to get pupils to compete with one another, nor should we focus attention on any one person who is doing well. These students will want to do things as a group. So if one person is having trouble, the pupil next to him will tell him an answer. Then all can go on to the next lesson or book at the same time. One way this can be coped with is to have plenty of supplementary reading for the brighter pupils. This idea of doing things as a group is somewhat foreign to our individualistic European way, but if we realise the pressure of the group in Aboriginal culture, we can find ways to use it to our

advantage in teaching literacy.

No matter how excellent the reading materials, or how well trained the teachers, a literacy programme will fail if the people are not motivated. The motivation could come from a number of sources: community appreciation for the skills of vernacular reading and writing, desire for knowledge, a need to write letters or a desire to read Scripture. If motivation is missing, there is little point in starting a literacy programme. Time would be better spent in stirring up motivation and showing how literacy would be a benefit to the community.

6. CONCLUSION

A study of Aboriginal culture, teaching methods and ways of doing things can give us many clues for making the literacy programme as relevant and acceptable to the people as possible. It can also give clues as to what to avoid, such as ignoring kinship terms and relationships, holding classes at unsuitable times and having too many pupils in a class. But in making use of such information, we must not think that Europeans are teaching literacy in an Aboriginal way. It will be Aborigines who understand the foreign concepts and skills involved in learning to read who will be able to teach reading to traditionally oriented Aborigines in a cultural way.

FOOTNOTES

1. This paper was originally written in 1976. Since then Stephen Harris, in particular, has published some excellent material on Aboriginal approaches to learning. Harris's material is worthwhile reading for anyone involved in teaching Aboriginal adults or children. Bibliographic information is given in 'Suggested Readings' at the end of this paper.

2. I would like to express my appreciation to Susanne Hargrave for editing the manuscript and to John Sandefur, Eirlys Richards, Max Hart and Pam Harris for reading the manuscript and giving me helpful comments.

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CHARACTERISTICS OF ABORIGINAL COGNITIVE ABILITIES: IMPLICATIONS FOR LITERACY AND RESEARCH PROGRAMMES

W.H. Langlands

0. INTRODUCTION: TOPIC, PURPOSE AND SCOPE

Even a short time spent in association with Aboriginal people, particularly those from a traditional background, will be sufficient to convince the sensitive non-Aboriginal that these people are different. Closer acquaintance will almost certainly bring an awareness that these superficial differences observed in activities and material culture are accompanied by deep rooted psychological, sociological, linguistic and spiritual differences which are manifest in a distinctive Aboriginal way of thinking.

The research of Harris (1977)[1] at Milingimbi, an Aboriginal community in Australia's Northern Territory, has far-reaching implications for those interested in Aboriginal education. Employing the method of participant observation, Harris explores situations of Aboriginal learning and teaching as it goes on in everyday life. He also looks at the kinds of sociolinguistic rules which operate in these situations. His findings show that Aboriginal people differ markedly from non-Aboriginal people both in learning methods and patterns of sociolinguistic interaction. These findings are in line with many overseas studies comparing western and minority culture teaching/learning contexts. (Take for example the work of John [1972] and Dumont [1972] which revealed a marked difference and even conflict between the way non-Indian teachers expected Indian children to learn and the way these children expected to learn and to be taught.)

Harris, generalising from his work at Milingimbi, summarised some of these differences between Aborigines and non-Aborigines in a paper presented at a conference of teachers of Aboriginal children. Figure 1 is taken from a published form of that paper.

FIGURE 1

THE MAIN FEATURES OF ABORIGINAL LEARNING PROCESSES (Harris 1978:4)

Most non-Aboriginal learning in Australia is FORMAL, i.e. conducted as follows:	Most Aboriginal learning is INFORMAL, i.e. conducted as follows:
in specifically educational institutions and buildings	without specifically arranged educational institutions or buildings
by trained teachers who have a specific office of teacher	by various relatives
with the content having little immediate application to everyday life and survival	with the content having immediate relevance to, and arising out of, everyday life and survival
largely through verbal instruction (while there is much informal learning in western society - such as in the home - this is still accompanied by much more verbal teaching than is the case in Aboriginal society)	largely through non-verbal means
is often imparted in compact highly organised 'courses' which take comparatively little time	in most cases is time consuming with most skills being learned over many years
learning is often a highly conscious process	learning is often not a highly conscious process

Harris expands what he means by 'largely non-verbal means' by giving examples of how he observed Aborigines learning by observation and imitation and personal trial and error. Aboriginal education is traditionally carried out, it seems, by 'real-life performance rather than through practice in contrived settings', through 'mastery of context specific skills rather than abstract, context free principles', and with an 'orientation to persons (most often close relatives) rather than to information' (1978:5,6).

Other relevant characteristics of Aboriginal learning summarised by Harris are

1. present and past-continuous rather than future time orientation
2. cultural conservatism resisting change
3. an upbringing which encourages independence
4. a definition of knowing which means as much 'the right to know' as it does actually 'knowing'
5. the use of persistence and repetition as a problem solving approach rather than an analysis-before-action approach

In the area of sociolinguistics, Harris (1978:8) makes the important observations that

1. Aboriginal languages do not allow for 'why' questions in the sense of 'for what reason' and they will often resist questions requiring 'if.....then' analysis or hypothesising about other people's motives for doing things. 'White teachers often fail to recognise that this classroom question and answer technique is a western classroom ritual. Aboriginal people are extremely pragmatic and see no sense in teachers asking questions when it is obvious that they already know the answers.'
2. In Aboriginal society there exists a right to speak and the right not to listen.
3. Aborigines do not equate restlessness and movement in audience with rudeness.
4. There is a tendency, due to the lack of an impersonal debate form in Aboriginal language, to avoid strong talk and direct verbal confrontation.

Many of these findings are clearly crucial for those involved in any education programme directed toward Aborigines. But as Harris (1977:447) has rightly pointed out, if we are to really understand the ways in which Aborigines can best learn, we must not only define external behaviours related to learning and communication but we must also recognise that ' learning is an internal and phychological process and ultimately a psychological explanation for how yolngu [Aboriginal] children learn is necessary.' In his research Harris has sought to demonstrate 'that yolngu students are in the ways their minds function as well as in cultural terms different from balanda [non-Aboriginal] students.'

It is the purpose of this paper to look at the characteristics of Aboriginal cognitive abilities and in particular those abilities which may be involved as Aborigines learn to read. Harris's work

along with other relevant research is considered in the paper. In broad outline the paper takes the following course. Section 1 considers the concept of cognitive ability and seeks to explore the relationship between external behaviour and environments and their cognitive correlates. The theories of functional learning system and cognitive style as taught by several writers are discussed.

Because the present author is primarily concerned with how best to teach Aboriginal people to read, section 2 attempts to find out which cognitive abilities are involved in reading and learning to read.

Having limited our present purpose to exploring reading-related intellectual skills, we proceed in section 3 to look at some cognitive ability of different ethnic groups. The purpose of this section is to enable us to infer, on the basis of the theories of functional learning system and cognitive style, where we may expect to find differences in cognitive skills between Aboriginal and non-Aboriginal people.

The purpose of section 4 is twofold: firstly to summarise the findings on Aboriginal cognition that may be relevant in helping Aborigines learn to read, and secondly to discuss some of the possible implications of these findings in the reading education sphere.

Section 5 attempts, in the light of overseas findings and our understanding of cognitive abilities involved in reading, to delineate areas where further research needs to be done if we are to 'know what we are doing' in teaching Aborigines to read. The paper concludes with a plea for interdisciplinary research, practitioner observation and recording of observation, publication and co-operation in efforts to bring education to Aboriginal people.

At this point I would like to say that the present paper has a number of limitations. Firstly, what is said here can in no way be considered complete but is rather a work paper in an area of interest written as a learning experience for the author. It is an attempt to find out and present in an orderly fashion some facts about Aboriginal cognitive abilities which may guide the writer in his efforts to develop a literacy programme in a traditional Aboriginal community. Secondly, what is presented here ignores much earlier research on the subject and almost certainly omits to take account of some recent studies which were simply unavailable to the author. Thirdly, in this paper I have limited myself to literature from cross-cultural psychology. Psychologists testing Aboriginal people naturally work under difficulties.

So Brislin (1976:29) writes:

> Assume a white psychologist is giving a test, such as the Peabody Picture Vocabulary Test, to Aboriginal Australians. Among such people for whom testing is not common, the performance on the test can be due to any of these factors: real competence which the test is designed to measure; unfamiliarity with the test materials; nervousness in the presence of the test administrator; indifference at working on a test whose relevance is not obvious; total boredom; purposeful efforts to sabotage the research; ingratiation tendencies, leading to responses the test-taker thinks the administrator would like to see.

Clearly the results of cross-cultural cognitive psychological studies need to be taken with caution. This is one of the reasons why I have emphasised later in the paper the need for a multi-disciplinary approach to such studies. There is a real need for the 'light' discovered by one discipline to be used to scrutinise the discoveries of others' research.

For these reasons the conclusions of this paper must be taken as tentative. Aside from the above limitations, factors of a motivational, cultural, social and linguistic nature need to be considered if we are to fully understand problems and effectively design programmes that will advance Aboriginal reading education. This paper, limiting itself as described above, does not consider all these factors. Despite these limitations it is hoped it will help to provoke discussion and prove in this way to be of some use.

In the paper the term 'cognitive abilities' is used in the sense of 'the total profile of intellectual abilities of the individual'. (A more limited use of the term by Guildford is discussed in section 1.1.)

1. COGNITIVE ABILITIES, FUNCTIONAL LEARNING SYSTEMS AND COGNITIVE STYLE

In this section we are interested in the basic questions, what kind of cognitive abilities are there and how are these related to or shaped by a person's cultural environment?

1.1 COGNITIVE ABILITIES

Factor analytical studies of human intellect have led to the discovery of numerous components of human intelligence. Each

component is a unique factor needed to do well in certain kinds of tasks. There are a large number of components but they can be grouped into bunches which resemble one another in certain ways. J.P. Guildford (1959, 1967) gives a model of intellect which groups the components of intellect along three different dimensions. These are

1. the kind of process or operation performed using these aspects of intellect
2. the material or content processed in these operations
3. the products which result from the processing of content.

About the first of these Guildford writes (1959:470), 'This kind of classification gives us five major groups of intellectual abilities: factors of cognition, memory, convergent thinking, divergent thinking and evaluation.' Cognition in this model is defined as discovery or rediscovery or recognition. Memory is the ability to retain what is cognised. Divergent thinking is one of the two kinds of productive thinking. In divergent thinking the mind searches in several directions looking for new, novel or original solutions to problems. Convergent thinking, the other kind of productive thinking, leads to one 'right answer' or to the recognised 'best' or conventional answer. In evaluation the learner is deciding upon the goodness, correctness, adequacy or suitability of what he knows, remembers or produces through productive thinking.

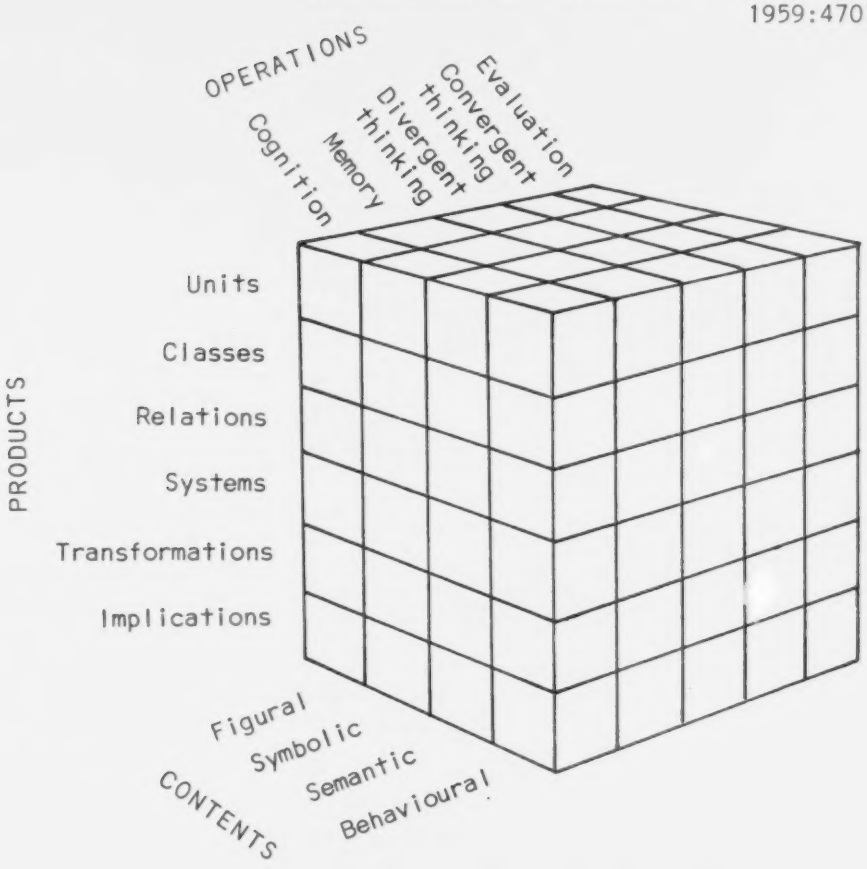
There are four kinds of material which the intellect processes. They are figural, symbolic, semantic and behavioural. Figural content is concrete material perceived by means of any of the senses. It does not represent anything but itself. Symbolic material on the other hand is composed of letters, digits and other conventional signs usually organised into systems such as alphabets or number systems. Symbolic material represents figural, semantic or other symbolic material. The semantic content of operations is material in the form of meanings to which words have become attached. Semantic content is largely verbal thinking and verbal communication. Behavioural material will not be discussed here.

When an operation is applied to a particular content, as many as six different kinds of products or forms of processed information may result. These Guildford calls units, classes, relations, systems, transformations and implications.

Guildford represents these three modes of classification of the factors of intellect in a single solid model which he calls the 'structure of intellect' (figure 2). Each dimension represents one of the modes of variation of the factors.

FIGURE 2

THE STRUCTURE OF INTELLECT (Adapted from Guildford 1959:470)



Guildford (1959:471) writes:

> Each cell of the model calls for a certain kind of mental ability that can be described in terms of operations, content and product, for each cell is at the intersection of a unique combination of kinds of operation, content and product.

He then proceeds to explore the model and give examples of the kinds of tests that he sees as being used to test a person's ability in each cell of the model. The problem with any model of intellect is, of course, that no matter how complex, it is almost bound to be an over-simplification. So for example, the operations of thought do not function on a one-at-a-time basis. There is constant interaction between the ongoing processes of thinking. Thus Wilson,

Robeck and Michael (1969:402-403) write:

> Evaluation operations interact continually with the other operations. Raw data, from the environment and from the body functions or soma, are processed by cognition, which is evaluated, stored in the memory bank and transferred to convergent production or the outcome is added to input from the memory bank and from outside the system, evaluated and run through further production processes, which are also evaluated, stored and modified and removed from the system either to the memory bank or to external output.

Even considering the Guildford model at face value without the above-mentioned interactions and complications, there are 4 x 5 x 6 or 120 different mental abilities. And one may assume that any given individual may have any combination of strengths and weaknesses of these 120 mental capacities as his total intellectual ability. We must now consider how culture and environment may affect the development of an individual's intellect. We will return to Guildford's model in section 2.

1.2 CULTURE AND COGNITIVE ABILITIES

Do cultural factors, that is the formal and informal educational influences brought to bear upon the children of a culture from the moment of birth, exert an influence upon that people's characteristic intellectual structure? Or putting it another way, are there characteristic patterns of differences in the combination of strengths and weaknesses of cognitive abilities which distinguish one cultural group from another? No doubt all cultures will train their members to use a variety of cognitive abilities. We certainly do not want to insinuate that any cultural group will be without, for example, any of the operations or avoid the use of some of the types of content or fail to produce any of the various products.

> We are unlikely to find cultural differences in basic component cognitive processes [Guildford's operations], but ... socio-cultural factors play an important role in influencing which possible alternative processes (visual or verbal representations for example) [Guildford's intellectual abilities] are evoked in a given situation and what role they play in the total performance. (Cole and Scribner 1974:193)

Rather we want to suggest that a person's cultural environment will train him to use certain factors or components of cognitive ability to a greater or lesser extent than others. Thus in the process of cognition, for example, we could surmise that some cultural groups

would place greater emphasis upon the development of the kinaesthetic rather than the visual factor of cognition or on the visual rather than the auditory factors of memory, and so on.

If, as we suggest, there are such cultural differences (the reader may want to reserve judgment until evidence of such is presented in sections 3 and 4), how can they be accounted for? Why should culture produce such an effect? Harris says (1977:456),

> If adaptation to the challenges of a person's social and physical environment for the purposes of survival is the most meaningful indicator of intelligence (as Piaget believes), then it is reasonable to expect that different environments and economics and social systems will require different systems of thinking for intelligent adaptation.

This is why when we are comparing mental abilities across cultures it is not very meaningful to look for amounts of intelligence in the western psychological sense but rather to ask the question 'Intelligence for what?' A human being's adaptation to his environment will strengthen or amplify the mental capacities necessary to meet the challenges of that environment. Brunner in *The Relevance of Education* (1974:68) writes:

> What is most unique about man is that his growth as an individual depends upon the history of his species - not upon a history reflected in genes and chromosomes but, rather, reflected in a culture external to a man's tissue and wider in scope than is embodied in any one man's competency. Perforce, then, the growth of mind is always growth assisted from outside . . . the limits of growth depend on how a culture assists the individual to use such intellectual potential as he may possess . . . What a culture does to assist the development of the powers of mind of its members is, in effect, to provide amplification systems to which human beings with appropriate skills can link themselves.

1.2.1 FUNCTIONAL LEARNING SYSTEMS

The theory of functional learning systems, first propounded by Vygotsky in the late 1920s in Russia and developed by others since, seems to provide an effective way of explaining the relationship between culture and thinking. The roots of the theory are found in Marxist views that people do not have fixed mental capacities but rather that they transform themselves through actions aimed at

survival. 'Marx's central idea . . . is that man's nature evolved as man worked to transform nature' (Cole and Scribner 1974:3).

Functional learning systems develop within an individual so that he can cope with his physical (economic) and social (mental/emotional) environment.

> The idea is that the social and economic history of a society causes changes in ways of thinking, both in terms of the content of thought and the processes of thought . . . higher psychological functions . . . such as voluntary memory, active attention, abstract thought . . . are organised into different functional systems in response to the different needs of historically and culturally determined practical and theoretical activities. (Harris 1977:458)

So while we may say that children from different cultural groups are born with the same range of genetic potential for intelligent thought, they actively participate in their own mental development by acquiring through cultural transmission the functional tools of thinking they need to shape their own environment. Just as tools and weapons (the making and use of which are culturally taught) determine a person's ability to shape his physical environment, so culturally transmitted tools of thinking, designed to cope with the environment, shape each individual's use of his mental processes in grappling with his surroundings. Harris (1977:459) gives examples of such culturally varying tools of thinking. He includes such things as

> school learning (which deals with other than the here and now), types of children's play (which rehearses future adult roles), use of inner speech (which is a private use of verbalisation for problem solving), literacy (which alters the role of memory and which also trains people to deal with other than the here and now), or training in mathematics (which stimulates the growth of quantitative perception), and so on.

It seems possible therefore that the differing pressures of social and economic survival give rise to different profiles of cognitive abilities which have become known as functional learning systems. Each culture is a repository, devisor and transmitter of amplification systems and devices which mold the individuals within a culture, not only giving them a distinctive set of artistic, literary and economic skills, but a characteristic intellectual profile.

1.2.2 COGNITIVE STYLE

The study of the relation between perception and environmental factors is also of importance to us here. This work has led to the concept of cognitive style. (Perception is defined here as that part of the cognitive process by which people organise and experience information that is primarily of a sensory origin; Cole and Scribner 1974:61).

Broadly speaking there are two 'types' of perceptual cognitive style, although these are really the two ends of a range or continuum of perceptual outlooks. These types as identified by researchers (e.g. Witkin 1967; Berry 1971, 1974a; Berry and Annis 1974) are commonly termed 'field-dependent' and 'field-independent'. The former type of perception (also called 'global') focuses on the whole and has difficulty picking out the parts; the latter (also called 'articulated') is analytical, focusing on the parts.

According to Berry (1971, 1974a), the major experiential factors affecting the development of field dependence or independence are child-rearing practices (the social environment), the physical environment in which the child lives and the means by which the child's society wins survival within that environment. As an example of the effect of child-rearing practices Berry suggests that a personally insecure, over-protective mother who treats her child as if he is younger than he really is, controls aggressive behaviour and restricts exploration of the environment will tend to produce a field-dependent child. As an example of the effect of physical environment, people who live in a desert or an ice-land waste which are low-contrast environments would, according to Berry, tend to be high in field-independence.

Berry in one study was able to gain support for a model which relates ecological, socio-cultural and psychological variables as shown in figure 3. The main ecological dimensions explored are those of low food accumulation and high food accumulation. These are, of course, typified on the one hand by hunting and gathering societies and on the other by many agricultural societies. The model predicts that low food accumulation would be associated with field-independence while high food accumulation would be associated with field-dependence. Once again as with earlier discussion we must sound a note of caution. Berry is at pains to point out the limitations of his model. He notes that it depicts correlations and not necessarily causative relationships. Within many societies there is also a tendency to a field-dependent/independent dichotomy between men and women. There is a range of degree of dependency within every society. The most that can be said is that there is a general tendency for cultures to range between these two extremes of perceptual-cognitive orientation.

Broadly speaking, then, if we accept the concepts of functional learning system and cognitive style, we may say that different cultures for reasons of survival 'push' intellectual growth in different directions. But as Harris (1977:456) is at pains to *point out*, we must ask the question concerning intellectual growth 'Intelligence for what?' Problems mostly arise *it* seems when people from one culture are forced by circumstances to cope within the framework of another, using a cognitive style and functional learning system not appropriate to the new environment. It would seem, in the light of all this, that if Aboriginal people are to be introduced to skills like reading and mathematics which are foreign to their culture, those responsible need to take account of possible differences in configuration between western and Aboriginal cognitive profiles.

FIGURE 3

ECOLOGICAL MODEL: SOCIAL AND PSYCHOLOGICAL CORRELATIONS
(Adapted from Berry 1974a:171)

ECOLOGICAL	Low food accumulation	High food accumulation
SOCIO-CULTURAL		
Population Density	Low	High
Social Structure	Egalitarian Atomistic	Hierarchical Stratified
Family Structure	Nuclear	Extended
Socialisation	Lenient Supportive	Harsh Restrictive
Social Relations	Reserved Fragmented	Mutual Dependence Integrated
PSYCHOLOGICAL		
Perceptual-Cognitive Style	Field-Independent Analytical	Field-Dependent Global

2. COGNITIVE ABILITIES INVOLVED IN READING

2.1 READING AND THE STRUCTURE OF INTELLECT

Which of the numerous cognitive abilities are involved in the task of reading? Edmund Burke Huey in his book *The Psychology and Pedagogy of Reading*, first published in 1908, recognised that

> to completely analyse what we do when we read would almost be the acme of a psychologist's achievement, for it would be to describe very many of the most intricate workings of the human mind . . . (1968:6)

More recently Smith wrote (1971:205-6):

> As more than one authority has observed, the ultimate solution to the question of how reading is accomplished will provide an explanation for human thought.

In 1963 George D. Spache attempted to relate known reading behaviours to the model of the structure of intellect produced by Guildford. He presents his ideas in three charts which have been reproduced in figures 4 to 6 of this paper. The first of these (figure 4) looks only at the symbolic content classification of Guildford's model, which for reading Spache sees as letters, numbers and words. Spache attempts to show how a reader, using each of the five processes, will produce intellectual products that are units, classes, relations, systems and transformations. In general the vertical columns (Unit to Transformations) represent an increase in the complexity of the task of word recognition, although it should be emphasised that Spache's figure has the same kind of limitations as Guildford's model. In point of fact a reader tends to combine various cues from each of the vertical columns as his word recognition skills mature.

FIGURE 4

READING BEHAVIOUR IN SYMBOLIC CONTENT (Spache 1963:240)

Mental Processes	Unit	Class	Relations	Systems	Transformations
Cognition (recognition of information)	Recognition of printed word as such	Recognition of difference among letters, words and numbers	Recognition by word form and letter details, as *little*	Recognition of phonic characteristics, i.e. initial and final sounds	Recognition of word endings (plurals, or roots and affixes)
Memory (retention of information)	Recall of specific word forms, e.g. own first name, house number	Recall of random words, letters and numbers in isolation (reading signs)	Recall by word form and details (sight vocabulary)	Recall of complete word by combined clues, e.g. initial sound, sentence pattern and form	Recall of word endings (s, ed, ing) root or affix
Divergent Production (logical, creative ideas)	Neologisms, word form errors	Recognition by distinctive detail as *g* in *dog;* capital letters	Recognition by base word within larger, compound words	Spontaneous phonic and structural generalisations	Experiments with derived and base words
Convergent Production (conclusions, inductive thinking)	Recognition by pictorial clues, shape of sign, etc.	Recognition by sheer length, as *grandmother;* or by unusual shape, as *elephant*	Recognition by sentence pattern, word groups	Recognition by word families, common syllables, roots, etc.	Recognition of derived words by base plus ending, or root plus affixes
Evaluation (critical thinking)	Comparisons of differences and similarities in gross form	Discrimination of words, numbers, letters	Discrimination by form, details and sentence pattern	Discrimination by form, details and phonic elements and sentence pattern	Discrimination of base and derived words by endings, letter sounds, sentence pattern, root and affixes

Figures 5 and 6 both deal in a similar way with two kinds of semantic content. Figure 5 looks specifically at the meanings of words while 6 is concerned with sentences and paragraphs.

Spache recognises that none of these figures fully represents reality. All are an oversimplification. All the possible reading behaviours are not included nor would every reader necessarily manifest all of these behaviours. Concerning figure 6 he writes (1963:66):

> This figure oversimplifies the process of comprehension in reading, in that words are not only units, but also form classes, relations and so on. Sentences also certainly form systems, transformations and the like. Moreover, the figure does not include all types of reading behaviour which occur in dealing with words or ideas.

FIGURE 5

READING BEHAVIOURS IN SEMANTIC CONTENT OF WORDS
(Spache 1963:386)

Mental Processes	Unit	Class	Relations	Systems	Transformations	Implications
Cognition (recognition of information)	Recognition that printed word has meaning	Recognition of word function—naming, action, descriptive, pronominal, connective	Recognition of word associations and relationships, e.g. synonyms, onomatopoeia, alliteration, rhyme	Recognition of implicit comparison in hierarchies of words (temporal, spatial, intensity)	Recognition of inherent meaning in roots, affixes and inflectional forms	Recognition of word connotations, figures of speech and presence of tone and mood
Memory (retention of information)	Recall specific word meanings (denotations)	Recalling specific meaning thru recognition of function, e.g. this word is a thing	Recall the associated word (synonym, etc.) and thus recall meaning of given word	Recall of base word and meaning, recall of other degrees in the hierarchy, e.g. recognized *strongest* through *strong*	Recall of meaning of base word or of root and affixes	Recall of specific connotations and meanings of figures of speech
Divergent (logical, creative ideas)	Secure meaning from context by inference, guess	Recognizing examples of unusual or new usage, e.g., *Nile West*	Using mnemonics to recall meaning	Using trend of hierarchy to recognize comparison and thus derive meaning for given word	Recognizing words containing new, or assimilated, condensed or related affixes and roots. Discriminating differences in meaning due to variants	Free association to connotations, i.e. daydreaming or imagery; recognizing new figures of speech, new connotations, allegories
Convergent (conclusions, inductive thinking)	Meaning from context by sentence structure (appositive, explanation, contrast, definition)	Relating specific meaning to antecedent, to accent and contextual clues to function of the word	Try associated word (synonym, etc.) in context and thus derive meaning intended for given word	Given a group of words, formulates a tentative hierarchy	Use of structural analysis as clues to meanings; dictionary study of derivation	Using connotation, tone and figurative language to interpret context
Evaluation (critical thinking)	Critical reaction to author's choice of words	Reacting to author's usage, to use of slang, colloquialisms, etc.	Discriminating differences among synonyms and antonyms; recognizing irony and sarcasm	Reacting critically to shades of meaning, to exaggeration, hyperbole	Reacting critically to shades of meaning imparted by variations in affixes	Detection of author's use of emotionally-toned words, analysis of figurative language, tone or mood

FIGURE 6

READING BEHAVIOURS IN SEMANTIC CONTENT (MEANING AND IDEAS)
(Spache 1963:67)

Mental Processes	Unit	Class	Relations	Systems	Transformations	Implications
Cognition (recognition of information)	Recognition that word has meaning	Recognition of sentence as complete thought	Recognition of paragraph meaning (literal idea of paragraph)	Recognition of types of relationships within structure of paragraph	Underline key words of paragraph	Recognize that there are implications in author's main idea
Memory (retention of information)	Recall specific word meanings	Recall of thoughts of sentence (reverberations)	Comprehend main idea as summation of sentences (reverberation)	Summarize facts of paragraph in own words with due attention to structure	Combine recall with own associations	Choose possible implications from given alternates
Divergent Production (logical, creative ideas)	Meaning from context by inference	Selecting implied meaning of sentence	Choosing implied main idea	Analyze author's reasons for structure	Construct rebus of paragraph; offer new titles for paragraph	Amplify author's implications and ideas in free association
Convergent Production (conclusions, inductive thinking)	Meaning from structure of context (i.e. appositive sentence)	Combining ideas into literal meaning of sentence	Evolving main idea as extension of topic sentence	Categorize structure of paragraph; outline it	Choose among alternate titles or statements of main idea	Suggest future applications of author's ideas
Evaluation (critical thinking)	Acceptance or rejection of author's diction	Acceptance or rejection of meaning of sentence, as fact-opinion	Acceptance or rejection of main idea as fact or opinion; check author's sources; compare with own experiences and beliefs	Look for fallacies in logic, appeals to reader's emotions, overgeneralizations, omissions, distortions	Identify author's viewpoint and purpose; compare with other viewpoints; explore the ultimate outcomes of acceptance of author's viewpoint	Check author's background as basis for viewpoint; react to author's value judgments; examine author's basic assumptions and inferences from these

2.2 PERCEPTUAL ABILITIES IN READING

Spache's categorising of reading behaviour according to the process, content and product of intellectual activities, if it does nothing else, serves to demonstrate that reading potentially involves many of the intellectual abilities postulated by Guildford. It appears also that our understanding of what cognitive abilities are involved in reading is still very much a theoretical one and obviously an incredibly complex subject about which there will be a great deal of discussion for some time to come. Even if we concern ourselves purely with perceptual abilities (part of the process of cognition), a practitioner like A.E. Tansley, long involved in the teaching of reading and remedial reading, can write (1967:11):

> Research has not yet demonstrated unequivocally what perceptual abilities are important in reading. However, we can postulate with some degree of certainty those abilities which appear to be involved.

Turning from the purely theoretical we find that writers like Tansley can claim to have demonstrated, through practical experience, that the following perceptual abilities are important for reading (Tansley 1967:12-26):

1. form perception and classification
2. hand-eye motor co-ordination
3. visual copying
4. visual memory
5. completion and closure
6. appreciation of visual rhythm
7. visual sequencing
8. temporal sequencing (e.g. of pictures)
9. visual discrimination
10. auditory sequencing and rhythm
11. Tansley (1967:39) also distinguishes the abilities associated with phonic analysis as vital in reading. These include:

    a. appreciation of rhyme
    b. ability to discriminate between letter sounds
    c. ability to blend sounds
    d. ability to associate sounds with visual representations

Tansley (1967:91) points out further that 'Reading is not a visual and auditory skill alone but involves the integration of other sensory channels to a greater or lesser degree.' He identifies those channels involved as the visual, auditory, kinaesthetic, motor and tactile-cutaneous (haptic). These channels of perception do not work in isolation from each other, and for this reason he has found it necessary to test the extent to which a student has learnt to

integrate these. The following have been identified as important in some aspect of reading or writing (Tansley 1967:94-97):

1. visuo-motor integration
2. visuo-auditory integration
3. visuo-kinaesthetic integration
4. visuo-haptic integration
5. audio-haptic integration
6. haptic-kinaesthetic integration

It appears that in learning to read, all the senses are utilised. Thus for example haptic-kinaesthetic integration is important for the translation of auditory and visual stimuli into writing but it is also important because memory of pressure and movement in writing strengthens and enriches visual perception (Tansley 1967:67).

In a discussion of tests available for diagnosis of reading problems, Tansley (1967:115-119) examines the Illinois Test of Psycholinguistic Ability (I.T.P.A. See appendix for a brief description of this test.) He indicates that disabilities as measured by this instrument are associated with acute reading problems. The ten subtests of the I.T.P.A. measure ability in the following areas:

1. auditory decoding
2. visual decoding
3. auditory-vocal association
4. visual-motor association
5. vocal encoding
6. motor encoding
7. auditory vocal automatic
8. auditory-vocal sequencing
9. visual-motor sequencing

Dr Winifred Currie, lecturer in remedial reading, is a firm believer in eclectic approaches to reading instruction. She believes that when attempting to help a student to learn to read, there should be careful assessment both by informal observation and formal testing to ascertain intellectual strengths. Reading instruction, Dr Currie says, should use methods which will utilise these strengths. In her assessment of students she considers the abilities listed in figure 7 as the most vital.

Thus far we have considered perceptual factors, and to a lesser degree factors of memory, that are of importance in reading. Spache's theoretical distribution of reading behaviours into charts based on the Guildford model seem to indicate that the other intellectual processes, divergent and convergent thinking and evaluation, are relevant in reading and learning to read. Stauffer (1977) seems to show this also in a paper on the teaching of comprehension in reading. In comprehending a written passage a reader apparently uses

FIGURE 7

SKILLS FOR BEGINNING READERS (Currie 1978)

Auditory	recognising auditory differences recognising auditory sequences blending individual sounds to wholes reproducing auditory patterns
Visual	recognising visual differences recognising visual sequences joining individual parts to wholes reproducing visual patterns
Motor	recognising motor differences recognising motor patterns copying forms from model reproducing motor patterns
Compre-hension	telling what is happening in pictures choosing appropriate words to complete sentence given orally telling story about teacher-given topic retelling a story given by the teacher

divergent thinking to assess the possible alternative meanings (using memory of previous experiences as a basis). From this point he proceeds to re-examine available data, testing each meaning, and thus converges upon the most likely meaning of the text. Evaluative thinking enables him to assess whether he has in fact made a hypothesis as to meaning which will match the data. Spache also seems to imply (see figure 4) that even when working on symbolic content (as distinct from semantic content with which we would normally associate comprehension) these thinking processes are involved.

2.3 COGNITIVE DEVELOPMENT

A person's intellect is not fixed from birth but is constantly changing. For this reason we must give some consideration to the question of cognitive development. Piaget identifies four stages of

growth which he calls sensory-motor (to 2 years of age), pre-operational (2 to 7 years), concrete operations (7 to 11 years) and formal operations (11+ years). We need only consider the last three of these. (Ages here apply to western societies. They may not apply to other cultural groups.)

In the initial years of the pre-operational stage, thinking is transductive. Children are unable to consider more than one or two factors at a time and cannot reverse their thought to test if conclusions are true conversely. Generalisations thus made are often wildly inaccurate. In reading it is therefore

> not altogether surprising to find children guessing 'they' for 'yellow' and not being able to use the context as a clue to aid identification . . . (Goodacre 1971:22)

Gradually as visual identification becomes more accurate, little words may be observed within bigger ones.

> At this stage, however, it is probably extremely difficult for children to break up the slowly acquired sound pattern of words in order to relate phonemes to graphemes or even to distinguish morphemes. (Goodacre 1971:22)

Reading at this point of development is essentially a whole word process using word shape and perhaps beginning and ending letters and some other word features as identification aids.

Later in the pre-operational phase the child begins to think intuitively. He may be able to make better generalisations using a number of factors and begins to discover for himself the principles of phonic analysis. He will discern, for example, that words begin in similar ways. He may also begin to realise that the same symbols may represent different sounds (e.g. 'g' in 'ginger' and 'g' in 'garage'). It may be some time still, however, before he realises the reverse of this, that similar phonemes can be represented by different letter combinations (e.g. 'seat', 'meet', etc.).

During the concrete phase the abilities of reversibility and conservation develop, making it possible for the child to classify objects and experience on more than one variable, separate like and unlike, and to generalise more or less accurately. He can now see groups within groups — letters in words, words in sentences and identify capitals and lower case letters as members of the same class. At this stage he is able to seriate, order and sequence, and realise the importance of position of symbols (e.g. of letters in 'was' and 'saw', 'bad' and 'dad'; Goodacre 1971:23). By now a child

has begun, by the use of reasoning, to formulate his own phonic rules and may start the transition from beginning to fluent reading behaviour.

At the formal level of development the reader develops flexibility and maturity in reading. He learns to adjust his reading rate to the type and difficulty of material. He is now able to develop new concepts purely from written material without reference to the concrete. Reading matter is mentally organised so as to obtain overall meaning.

As one would expect, the growth of perception, cognition and memory are related to overall cognitive growth. From an early age children are able to visually distinguish shapes but as late as 6 to 9 years of age, still have problems with the spatial orientation of shapes. Younger children often have difficulty with letters that require direction for identification. Ascenders, descenders and angled shapes produce rotation and reversals. The relationship of one shape to another (sequencing and series relationships) are also a problem to young children, as is the development of appropriate and systematic scanning techniques necessary for the left to right process involved in reading. Centration, the tendency to fixate upon one aspect of the visual stimulus, makes seriation and classification difficult for small children. Writing practice (visual-motor, haptic and kinaesthetic integration) and the use of naming through language (visual-auditory integration) is vital for the development of discrimination in reading.

Goodacre (1971:59-60) also stresses the need for the development of visual memory. The whole word or phrase must be remembered while the configuration, length, individual letters and sequences of letters are discerned. Tansley (1967:11) writes:

> efficient reading involves the ability to keep a whole word or phrase in mind while simultaneously attention is paid to parts of the words or phrases. Without this ability there is a failure in discrimination and particular confusion over words which are of similar visual pattern.

Both experience and training enable this ability to develop but this capacity does not usually develop until a child has reached the later phases of the pre-operational stage or the beginning of concrete operations stage.

The perceptual abilities we have been discussing above can be measured by various tests like, for example, The Marianne Frostig Developmental Test of Visual Perception. The various subtests of

this battery give scores for

1. hand eye co-ordination
2. figure ground perception
3. form constancy
4. positions in space
5. spatial relationships

Tansley 1967 (pp. 12-22, 88-129) includes his own diagnostic devices of a non-standardised nature.

Auditory discrimination is also the product of intellectual development. To learn to read a child must, according to Goodacre (1971:72-73), develop the ability not only to

> differentiate each sound of his language from every other sound but also to hold each in his mind well and long enough for him to moderate his speech or make accurate comparisons between the sounds he distinguishes and their representations on the printed page.

Fine auditory discrimination such as is needed to distinguish between word pairs like 'hat' and 'mat', 'ball' and 'beach', and 'butter' and 'buzzer' does not normally develop until a child is 8 or 9. Figure 8 quoted in Goodacre (1971:75) shows the approximate ages at which children master the various speech sounds. It is interesting that these are mastered, as is oral vocabulary, according to usefulness in communication. Thus nouns and verbs are mastered before grammatical particles. The relationship between vocabulary items and their actual meaning develops slowly. A child's apparent vocabulary may be quite large but careful examination may reveal a general lack of understanding.

> The use of language structure by a child is not necessarily a guarantee that the child has the understanding some adults would attribute to him. (Goodacre 1971:74)

Younger children not only find the discrimination of some sounds difficult but may also have problems with blending of sounds and the discrimination of sequences of sounds within words. This has significant implications for the teaching of phonics and 'sounding out' word attack skills. Children in western cultures are not usually ready for such work until a reading age of 6.8 to 7.2. There is also, it seems, a chronologically progressive ability to acquire this kind of knowledge about how to read. Those sounds which are more frequently used in the reading task are acquired sooner. Less useful sounds are acquired at a later age.

Perceptual immaturity according to Singer (1976:307) is a major factor in failure to learn to read. Research has shown that children who are rigid in their perceptual processes, limiting themselves to a particular mode or combination of modes, fail more often in learning to read (Singer 1976:304). It seems also that the capacity to read fluently is closely related to level of intellectual development. To begin to read it is important that the learner has reached the stage of concrete operations (Elkind 1976:335) for it is only as he attains this level that he will have developed the mental abilities needed to read.

FIGURE 8

THE AGES AT WHICH CHILDREN MASTER SPEECH SOUNDS

Age 3.5	Sounds	b,p,m,w,h
4.5		d,t,n,g,k,ng,y
5.5		f
6.5		v,th (as in then),sh,zh,l
7.5		s,z,r,th (as in thin),wh,ch,j

Reading, however, is not only a perceptual skill. Truly fluent reading for meaning is dependent upon the ability to conceptualise and to reason about written material, that is, to make and test hypotheses about letters, words and sentences and so on at the phonological, grammatical and semantic levels. Singer (1976:304) points out that readers are often retarded because of their inability to move away from the concrete. Non-achieving readers often lack the flexibility of reasoning needed to do this. Fluent readers, on the other hand, have attained a level of development (formal operations) which enable them to build concepts and reason with concepts without direct recourse to the concrete world.

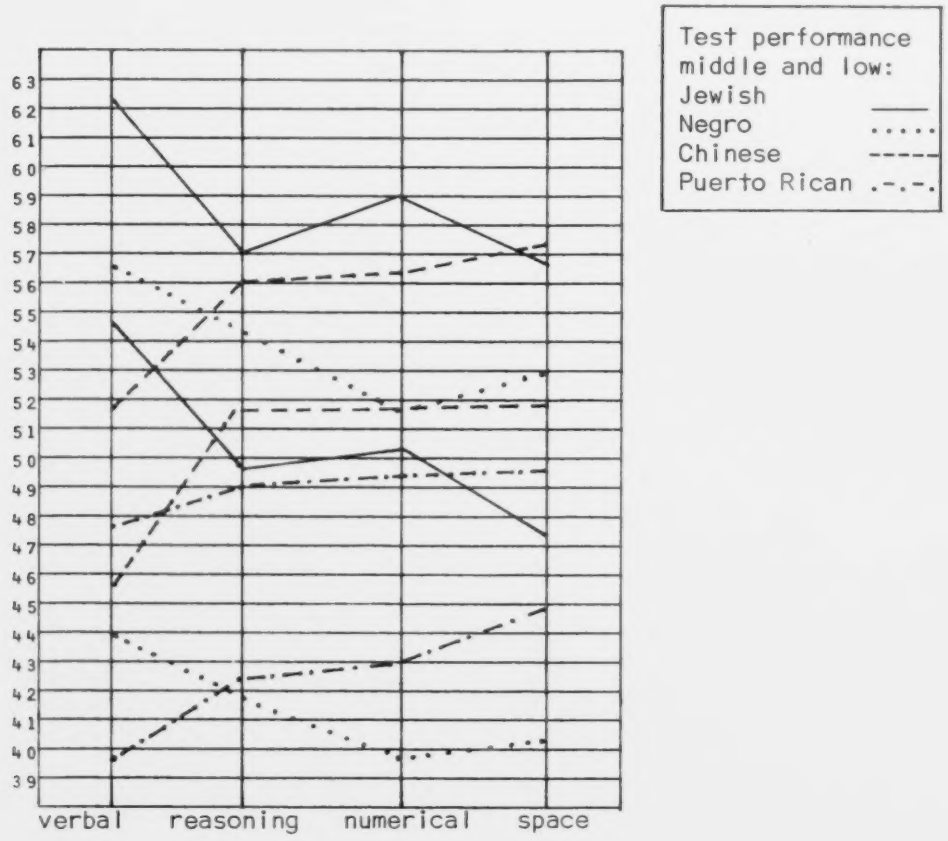
What cognitive abilities are involved in reading? Clearly reading involves all of Guildford's intellectual processes. How many of the separate abilities so classified is still a matter of great uncertainty but especially in the area of cognition it would seem that almost all are directly involved. Many abilities involving the processes of memorising, divergent and convergent thinking and evaluation must also be involved in learning to read and in reading fluently. These are clearly not separate but inter-related capacities which are all subject to ongoing development, and developmental level will greatly affect a person's ability to learn to read and to read well.

3. RESEARCH FROM OUTSIDE AUSTRALIA CORRELATING CULTURE AND COGNITIVE ABILITIES

The idea that differing cultural and ecological environments generate distinct patterns (profiles or shapes) of strengths and non-strengths in intellectual abilities has lead to many cross-cultural studies. Miller (1978:152-4) cites a study by Lesser and others which shows on the same graph the profiles of Jewish, Negro, Chinese and Puerto Rican children. The profiles depict scores in verbal, reasoning, numerical and spatial abilities. The graph (figure 9) shows that two groups (middle and low) from each culture have profiles of almost identical shape while each culture has a distinctly different shaped profile from the other.

FIGURE 9

COGNITIVE ABILITIES OF CHILDREN IN DIFFERENT SOCIAL AND CULTURAL GROUPS (Redrawn from Miller 1978:153)



Berry (1974b) suggests that each culture has its own ideal profile of abilities seen as intelligence or brightness. He concludes that what we have been doing with western intelligence tests is to try to squeeze non-western intellects into a western mould. Wober (1974) has written a fascinating paper on the concept of intelligence among the Kigandans (an African group). These people associate words like steadiness, slowness, obduracy, stability, carefulness, active, warm, friendly and sociable with a rare overall quality of man similar, in a way, to the western idea of intelligence.

Because of the variety and number of studies that have sought to compare cognitive abilities cross culturally it has been necessary for the sake of brevity to summarise these in tabular form in figure 10. Our purpose in presenting this table is to provide a background against which we can discuss the question, *What research still needs to be done to enable us to better understand the unique nature of Aboriginal cognitive abilities?* Unfortunately the application of findings in many studies to the everyday practice of teaching reading is often difficult. The workings of the intellect, even in the western world, is still a subject of much conjecture. With the added variables that cultural differences bring into play we are sailing very much in unchartered waters. Even to ascertain the implications of all available material would be a vast task beyond the scope of anything we can attempt here. We have done little more than choose a few relevant studies.

Ideally all the studies listed in the tables below should have been reviewed from the originals. This has not been possible and so some of the entries come from reviews like *Culture and Thought* (Cole and Scribner 1974). Where this is the case, the secondary source has been listed in brackets in the author-date column of the charts. In some cases originals have been available in reprint. In this case, reprint date has been recorded following 'reprinted' in brackets under the original publishing date.

Column one of the charts indicates the topic and in some cases the specific cognitive ability under study. As much as possible these are grouped according to Guildford's process categories beginning with processes of cognition.

Column two lists the groups involved as subjects of research and tries to indicate, where these variables were considered in the study, which extreme of the ecological continuum (high food accumulating vs. low food accumulating) the groups would tend towards. The abbreviations HFA and LFA are used for this purpose.

The third column briefly summarises the results of the study in so far as it could be relevant for the purposes of this paper.

FIGURE 10

SOME CROSS-CULTURAL STUDIES OF COGNITIVE ABILITIES

Topic of Ability	Groups	Summary of Some of Results	Author Date
Visual and visual spatial discrim-ination	Africa (HFA) Papua New Guinea (HFA) Australian Aboriginal (LFA) Eskimo (LFA) Scottish (Western)	Level of visual-spatial discrimination correlates with ecological demands. Hunters (LFA) strongly orientated toward visual, visual-spatial abilities. (This study also included in figure 11 because of Aboriginal content.)	Berry 1971 (Reprinted Berry & Dasen 1974: 129-140)
Eidetic imagery	Ibo (Eastern Nigeria)	Incidence of eidetic imagery dramatically high-er among rural Ibo than among westerners.	L.M. Doob 1964 (Reprinted Berry & Dasen 1974: 197-204)
Fine focus of eyes	Various	'. . .fine focusing of the eyes, especially in con-junction with manipulation, may be influenced by early experience.'	Munday-Castle 1974
Audio-visual integration	African European Asian	Audio-visual integration develops at different rates with different people.	Okonji 1974
Interpre-tation of pictures	Bantu Ghanian Western	Ghanian and Bantu groups interpret two dimensionally. Westerners three dimension-ally. Africans draw what they know to be there. Westerners draw what they see.	Hudson 1961 (Cole and Scribner 1974:67-71)
Orientation in pictures	African Western	Africans have difficulty in perceiving orientation in pictures. However it is comparatively easy to teach orientation and three dimensional viewing.	Dawson 1967 (Cole & Scribner 1974:83-84)

FIGURE 10 (continued)

Memory	Zumbuku (Zambia) schooled and non-schooled groups	Memory for detail in a story depends upon relevance and experience. School group better at recalling number facts and temporal facts. Social relevance a key factor.	Deregowski 1970 (Cole and Scribner 1974: 124-125)
Memory free recall of auditory and visual stimuli	African (Kpelle) American children	Lists of words and a number of objects. American--number and recall and rate of learning improved with age. Kpelle--learned slowly, only slight age improvement. Both groups learned clusters of objects and words better. Americans were more systematic in grouping. Both groups found recall of the concrete easier than just words. Americans still better.	Cole et al. 1971
Memory auditory-visual free recall in association with external cue	Kpelle (Africa) Western	Objects associated with external cues remembered better. Words given with suggested categories remembered better. Story items remembered either by clustering them together or by the context and flow of syntax. Study shows that Kpelle memory is flexible, adjusting according to needs. Memory for story material is apparently not superior to westerners.	Cole et al. 1971
Auditory memory	Ghanian and New York students	Significantly better results in remembering stories among Ghanians if the stories are culturally relevant.	Ross & Millson 1970 (Reprinted Berry & Dasen 1974:205-216)
Memory structuring	Kpelle adults	Kpelle people not able to spontaneously organise material to enable ready recall. Others get similar results.	Scribner (unpublished; in Cole & Scribner 1974: 135-136)

FIGURE 10 (continued)

Analytical ability (using various sense data to solve a problem)	Nigerian American (Western)	Nigerians more auditory and proprioceptively orientated in rod and frame test. Americans more visually orientated. Supports functional learning system rather than a cognitive style approach.	Wober 1966 (Reprinted Berry & Dasen 1974:119-127)
Inference problem solving	Kpelle (adults and children) American (western children)	A series of studies showed that the poor performance of Kpelle was due to not being able to understand how to begin an unfamiliar task. When the Kpelle were shown how to start they too succeeded.	Cole et al. 1971
Verbal-logical problem solving (syllogistic reasoning)	Kpelle Western	Kpelle attempt to answer problems on an external factual basis, not from knowledge in the syllogism. Western people do not do this.	Cole et al. 1971
Verbal-logical problem solving (syllogistic reasoning)	Kpelle Westerners (Adults and children in both groups)	Kpelle refused to accept the restraints of the text. Westerners kept within limits of the text. Schooling seen as the vital factor.	Gay 1971 (Cole and Scribner 1974: 166-167)
Colour vs. form preference in classification	African African School (transitional) Western	Western children classify by colour when young and form when older. Africans show a preference for colour which does not alter with age but does with schooling.	Suchman 1966 Serpell 1969 (Cole & Scribner 1974:92)

FIGURE 10 (continued)

Classification according to function, form and colour	Wolof (Senegal, West Africa) Village, schooled, city Western	Schooling strongly effects preference for form and function classification. School children are more able to verbalise their reasons for classification. The more schooling the more 'abstract' the classification.	Greenfield 1966 et al. (Bruner et al. 1966:270-319)
Classification and re-classification of colour, form and number	Mexican (children)	Ability to classify and re-classify using different variables strongly related to schooling and increasing age. Unschooled children perform about as well as grade three children. Schooling provides the dimensions of re-classification. Unschooled children are less flexible and find reclassification difficult.	Sharp & Cole (Reported in Cole & Scribner 1974:106-108)
Classification	Ibusa (Africa) Western (Scotland)	When testing with familiar materials no difference in classificatory ability occurs.	Okonji 1971 (Berry and Dasen 1974: 281-292)
Classification of familiar objects	Tiv (Zambia Africa)	Classification and re-classification of familiar objects (animals and plants) much easier for Africans. No consistent difference between educated and uneducated. Abstract and concrete concepts used. Familiarity, not just level of abstraction, is relevant variable. Schooling affects classification of familiar objects. Different dimensions used by schooled and unschooled.	Price-Williams 1962 (Cole & Scribner 1974: 116-117)

FIGURE 10 (continued)

Conservation of liquids	Wolof (W. Africa) Schooled and unschooled	Schooling is a major factor in the developing of conservation. Wolof children lag behind because they start school later. Unschooled children conserve later and some never conserve. Cognitive development may be arrested soon after 9. Reliance upon perceptual rather than conceptual data for conserving is characteristic of those who fail to conserve. Many have an 'action magic' idea.	Greenfield 1966 (Bruner et al. 1966:225-256
Conservation of solids	Mexican (Village children)	Experience with the medium increases ability to conserve. Thus potters' children were able to conserve clay.	Price-Williams et al. 1969 (Berry & Dasen 1974:351-352
Weight conservation	Zambian children	40-50% of Zambian children cannot demonstrate the ability to conserve weight by the time they leave school.	Heron and Simonsson 1969 (Berry & Dasen 1974:335-350)
Conservation of space	Zulu (African children)	Stages of development appear as Piaget has discovered but at a later age. Few achieve the level of concrete operations.	De Lemnos 1974 (Berry and Dasen 1974:367-380

4. RESEARCH FINDINGS ON ABORIGINAL COGNITIVE ABILITIES AND SOME IMPLICATIONS FOR LITERACY PROGRAMMES

4.1 ABORIGINAL COGNITIVE ABILITIES

We will now attempt, once again in tabular form (figure 11) to summarise the research findings or at least some of them relevant to an understanding of Aboriginal cognitive abilities. In this table L.S.E.S. stands for lower socio-economic strata, while H.S.E.S. stands for higher socio-economic strata. Abbreviations in the first column, such as I.T.P.A., refer to tests. These are described in the appendix.

FIGURE 11

SOME CROSS-CULTURAL STUDIES OF ABORIGINAL COGNITIVE ABILITIES

Topic or Ability	Groups	Summary of Some Results	Author Date
Visual discrimination skills Visual spatial skills	African (HFA) Papua New Guinea (HFA) Australian Aboriginal (LFA) Eskimo (LFA) European (Scottish).	Aboriginal groups showed themselves as good as traditional PNG and Africans and as good as non-traditional Africans and Europeans in discrimination skills. On spatial skills Aborigines were as capable as both African and PNG subjects (traditional and non-traditional groups).	Berry 1971 (Reprinted Berry & Dasen 1974:129-140)
Visual spatial memory and visual sensitivity (reduced exposure and light)	Desert Aboriginal teenagers L.S.E.S. city white teenagers	Visual memory of Aborigines clearly superior. Perhaps Aborigines possess eidetic imagery. Significantly better visual sensitivity could be due to finer acuity or differing sensory mechanism.	Kearins 1976 (Kearney and McElwain 1976: 199-212)
Visual spatial memory (Repeat of Kearins' 1976 study)	Coastal Aborigines City Aborigines Country whites	Study did not show Aborigines to be significantly better than whites in visual memory. (However, his other observations convince him of Aboriginal people's superior ability in visual memory. See 1977:483-486)	Harris 1977
Psycholinguistic abilities (I.T.P.A.)	H.S.E.S. white children L.S.E.S. white children Aboriginal children	Aboriginal children show a deficit in performance in auditory vocal channels of communication.	Teasdale & Katz 1968 (Reprinted Kearney, De Lacey & Davidson 1973: 149-154)

FIGURE 11 (continued)

Conservation of quality, horizontality, seriation and re-classification Verbal intelligence (P.P.V.T.)	Fostered and adopted Aboriginal children Other Aboriginal children White Canberra children	Aborigines with less contact were less able and gained these abilities later than other groups in all but conservation of weight. In this they fared better than adopted and fostered children. Their scores on the verbal ability test were much lower than standard scores and lower than the high contact Aboriginal group.	Dasen et al. (Reprinted Kearney, De Lacey & Davidson 1973:97-104)
Classification. Verbal Intelligence (P.P.V.T.)	Part Aboriginal children from a) reserve, b) town. L.S.E.S. whites	Progressively lower measures of verbal ability, operational (classification) thinking with whites, town Aboriginal and reserve Aboriginal. The degree of contact seems to improve classificatory ability.	De Lacey 1971 (Reprinted Kearney, De Lacey and Davidson 1973:155-159)
Classificatory ability	H.S.E.S. whites L.S.E.S. whites High contact Aboriginals Low contact Aboriginals	Results show that in general the less contact with European thought and technology, the less classificatory ability.	De Lacey 1970 (Reprinted Kearney, De Lacey & Davidson 1973:269-273)
Cognitive development (rate and level) Conservation--quantity, weight, volume, length; seriation; order--linear, reverse, circular; rotation horizontalism	White (urban) Aboriginal a) Low contact b) Medium contact	Development of Aborigines is slower. Concrete operations is only reached in spatially oriented tasks (seriation, order, etc.) A good proportion don't reach concrete operations stage at all. In the area of logico-mathematical skills most Aborigines don't reach the concrete operational stage. The greater the contact the greater the percentage of conservation and the earlier it occurs. Contact improves logico-mathematical skills. Spatial skills do not deteriorate. Aborigines develop spatial skills before logico-mathematical skills. The reverse of the European order.	Dasen 1974 (Berry & Dasen 1974: 381-408)

FIGURE 11 (continued)

Logico-mathematical operations (Conservation of weight, quantity, volume, length, and seriation of length) Spatial operations (linear, circular, reverse order) Horizontality	City whites Central Australian Aborigines Medium and low contact groups	Stages of cognitive development occur with all groups and in the same order. Development is slower with Aborigines and in a good proportion of Aborigines concrete operations is not reached. No difference was found between part and full Aboriginal people. Spatial concepts developed at an earlier age than logico-mathematical but still behind the non-Aboriginal groups.	Dasen 1973 (Kearney, De Lacey, Davidson 1973: 89-104)
Conservation—quantity, weight, volume, length, area, number	Elcho Island Hermannsberg Part and full Aboriginal children	Aboriginal children pass through the same developmental stages as white children but more slowly. In conservation they depend upon perceptual rather than conceptual factors in making responses. Aborigines are more successful with weight and quantity and conserve these before other qualities. This is the reverse of the European order.	De Lemnos 1969 (Reprinted Kearney, De Lacey & Davidson 1973:71-83)
Verbal intelligence (P.P.V.T.) Operational thinking (classification ability) Divergent thinking (creativity)	Aboriginal and L.S.E.S. European children	Both groups were equally linguistally retarded. In the area of thinking there were no significant differences. This indicates a relative strength in Aboriginal abilities and shows that thinking ability is not tied to verbal skill.	De Lacey and Taylor 1975.
Classification ability Verbal intelligence (P.P.V.T.)	Aboriginal, part and full (NT) L.S.E.S. white, country & city White city H.S.E.S.	Aboriginal children are retarded in verbal ability. Full Aboriginal managed as well as L.S.E.S. whites in classification.	De Lacey 1972

FIGURE 11 (continued)

Divergent thinking Verbal intelligence (P.P.V.T.)	Aboriginal children European L.S.E.S. children	Despite lower verbal ability there is not significant difference between Aboriginal and L.S.E.S. children on divergent thinking.	Taylor and De Lacey 1973
Classification according to a) function b) general class (e.g. tools, footwear)	Country and city Aboriginal children Country and town Europeans	Aboriginal children both 'city' and country showed a tendency to classify more according to function than abstract class.	Harris 1977
Conservation--quantity, length, area, weight, volume, number Psycholinguistic ability (I.T.P.A.) Verbal intelligence (P.P.V.T.) Language competence Basic concepts	Victorian Aborigines White Australians Migrants	Slower initial development of conservation but by the end of primary school have no significant difference between Aboriginal and other groups. Overall results show that Aborigines have a serious deficit in linguistic and conceptual skills. These tests correlated with reading ability.	Bruce et al. 1971
Verbal-logical thinking (syllogistics)	Aborigines (country and town) Whites (country)	Country Aborigines showed a strong tendency to rely upon experience rather than given information to answer logical problems. Town influence caused Aborigines to be less prone to go beyond verbal information.	Harris 1977

FIGURE 11 (continued)

Pre-causal and para-causal thinking	Aboriginal children and some adults (Elcho Island)	Aboriginal children are pre-causal in their thinking. Older people develop a para-causal mode which allows the simultaneous holding of logically conflicting ideas by using analogy and metaphore. Western elements can be included in their ideas.	Nurcombe 1970 (Reprinted in Kearney, De Lacey & Davidson 1973:105-123)

4.2 SUMMARY AND IMPLICATIONS FOR LITERACY PROGRAMMES

By now it will be apparent that there are vast gaps in our knowledge concerning the reading-related cognitive abilities of Aborigines. In our final section (5) we hope to show where some of those gaps exist. Here we are concerned about the implications of what is already known.

In general terms we would predict from the cognitive style of Aboriginal people and the findings of Harris (see Introduction) that they are non-verbal and perceptually analytical (probably visual) in their approaches to learning. Harris's emphasis on repetition and trial and error would also indicate a possible tendency toward a strong motor learning mode.

An aspect of cognitive style thus far unmentioned and somewhat beyond the scope of this paper needs airing briefly here. The analytical-global dimensions of the intellect are related in cognitive style theory to the personality dimensions of reflectivity-impulsivity. If these dimensions hold good in the more general classification of cultures using the cognitive style theory, then Aborigines should, it seems, tend toward the reflective end of the spectrum. Reading research (Athey 1976:371-372) seems to indicate that reflective individuals learn to read more easily than impulsive individuals. This may indicate a strength in Aboriginal people for reading--or is this too broad an application of the theory of cognitive styles?

From the research studies (figure 11) we can see that Aboriginal people have strengths in visual discrimination and visual memory predictable from Berry's ecological model (see section 1). Psycholinguistic testing using the I.T.P.A. shows that Aboriginal children

have a deficit in auditory and vocal communication skills. Is this due to the largely non-verbal nature of their learning systems? Results of tests of verbal intellectual ability could be interpreted as supporting this conclusion. However, in their own languages Aboriginal people show no obvious deficits in auditory-vocal skills. Probably the best interpretation of these results is simply that those tested did not understand English well. Other factors which may have affected test results are discussed by Brislin (1976:29. See Introduction).

Evidence from several different studies of classificatory ability is conflicting. It is apparent that Aboriginal children may have difficulties in some classification tasks and classify according to function and other non-abstract features far more than non-Aboriginal groups. The ability to be more abstract seems to develop as there is greater contact with schools and western ways.

From the research it seems probable that Aborigines have comparative strengths in the divergent and convergent thinking processes but that there is a strong tendency to depend upon a concrete non-verbal approach to problem solving.

Tests of conceptual development and language competence only serve to show that many Aboriginal people, even those in relatively high contact situations, are severely disadvantaged by current approaches to education in standard English. This is a fact that is already patently obvious in practice.

Work which has looked at the various types of conservation ability has shown that Aboriginal children develop along the same lines as non-Aboriginal children with a minor variant in that they conserve weight and quantity before volume, area, length and number. However other work has shown the rate of development of Aboriginal children is slower and the level of concrete operations is often only reached in spatially orientated tasks. These latter develop before logico-mathematical skills which is the reverse of non-Aboriginal children. A good proportion of children, and by inference adults, it seems never reach the stage of concrete operations, although there is some evidence that increased contact and education rectifies this matter. Logico-mathematical tasks, largely irrelevant in Aboriginal culture, remain beyond the majority of Aboriginal children. Many do not proceed beyond the pre-operational stage although once again increased schooling and contact with logico-mathematical concepts 'pushes' up the profile in this ability area.

One study at least (Nurcombe 1970) indicates that Aboriginal thinking is pre-causal or at most para-causal which means that 'causes' as understood in 'scientific' western thought may not be 'the causes' to the Aboriginal way of thinking. Cause will often be attributed to

anthropomorphic, spiritual or animistic forces. Aborigines may also hold para-causally both western and Aboriginal ideas about the 'cause' of something by using an analogical or metaphorical framework. Such an outlook makes western logico-scientific thought very foreign to the Aboriginal mind.

What are some possible implications of all this for literacy work with Aboriginal people?

1. Aboriginal strengths in visual discrimination and visual spatial orientation, along with superior visual spatial memory, indicate that methods of teaching must be strongly biased, at least in the beginning of learning, toward the visual. If we allow ourselves to take account of the action orientation of Aborigines (as suggested by Harris), we may postulate, although we have no psychological studies to support this idea, that Aborigines have a strongly developed motor and perhaps kinaesthetic-haptic cognitive orientation. This means that we must look for methods that major on visual and visual-motor skills as well. What we seem to be looking for then is a method of teaching reading which strongly emphasises sight (a look and say approach) and motor skills (a multi-sensory approach with a lot of writing of words, sentences and stories). Approaches to reading education like Breakthrough to Literacy (see Mackay et al. 1971) and various language experience approaches may be the answer. The Neurological Impress method, described by Sparber (1979:220-224) may also be very helpful.

2. If Aborigines are to read fluently they are going to have to master the phonic skills necessary to attack the unfamiliar words they encounter. I have already indicated that I believe test results showing that Aborigines have problems in the audio-vocal area are biased because tests have been conducted in standard English and disadvantage Aborigines in other ways. However if further research shows that there are real problems then this will necessitate work being done in the audio-vocal area beginning at the pre-reading stages and continuing on even while beginning reading lessons are majoring on visual-motor skills. The aim of such exercises would be to develop the functional capacities of the Aboriginal intellect to include the necessary audio-vocal strengths. Work would need to be done in auditory sequencing, auditory patterns, rhythm, rhyme appreciation, letter-sound discrimination, blending, association of sound and visual symbol, and auditory memory. Tansley (1967: 12-26, 38-55, 93-98, etc.) has some suggestions along these lines. Because many Aborigines first attempt to learn to read in standard English, they will obviously need prolonged, extensive exposure to this kind of English if they are to succeed.

3. The possibility that a good percentage of any given Aboriginal group may never proceed beyond the pre-operational stage of cognitive development has several implications for a reading education programme.

a. It makes the learning of phonic skills, which are dependent upon the ability to classify symbols on a variety of different variables, unattainable. This fact highlights the need for a pre-reading programme which will help to 'push' classificatory and other skills and so enable the attainment of concrete operations.

b. It also means that work with adults may be extremely slow and could fail in a good number of cases to take them beyond the sight word stage. Many older adults may have lost the flexibility necessary to allow their cognitive abilities to be reshaped to allow for non-cultural skills like reading. For this reason some may never become fluent readers.

c. It seems that even moderate fluency is dependent upon a reader reaching concrete operations. Real facility with critical analysis from the written page, that is the learning of new concepts and then integrating into the total conceptual system, is dependent upon the development of formal operations. For many Aboriginal readers we may need to be content therefore with only moderate fluency. Those involved in Aboriginal education will need to realise that even 'fluent' readers may not find it easy to comprehend new concepts from the written page. Community wide, 100 per cent literacy, it would seem, must be a very long term goal which will be dependent upon far more than the development of a literacy programme. What is really needed is a programme designed to enable Aborigines, whilst maintaining their present cognitive strengths, to develop other skills which are essential for reading — in other words to re-shape their functional learning profile.

d. For all Aboriginal people an orthography which is designed with a one symbol, one phoneme correlation will be far more successful than more complex orthographies like the English one. A simple orthography will reduce the number of variables that need to be handled by the new reader and make the development of phonic rules a much simpler process. When fluency is attained with such an orthography and a reader has the 'idea of how it's done' the transition to a more complex orthography will be far easier for him. Clearly initial reading instruction will be more likely to succeed if it is in the mother tongue of the learner whether that be an Aboriginal language, creole or non-standard English. Orthographies for the first two of these are usually prepared with a one symbol, one phoneme correlation. If non-standard English is to be used, perhaps an alphabet like the i.t.a. would be useful at the beginning stages. (i.t.a., initial teaching alphabet devised by Sir James Pitman and first used in England in 1961, is an attempt to

represent the spelling of English phonemically. It uses an alphabet of forty-four letters.)

e. Because Aboriginal children attain concrete operations later than non-Aboriginal children (if they attain it at all), then they should begin to learn to read later. Work in reading should not begin until 7 or 8 and even then should concentrate upon sight learning whole word approaches with the use of motor reinforcement of visual patterns. Phonic skills should not be expected until later, say 9 or 10 years of age, as they are also dependent upon the child obtaining concrete operations. A great deal of work may be needed before the child can attain these abilities. This will be especially true if standard English is the language being used.

f. Studies seem to show that whilst Aboriginal divergent and convergent processes are comparative strengths in their intellectual system, they are heavily dependent upon concrete sensory data, especially visual data. This again seems to suggest that people will find phonic analysis, which depends upon the comparison of visual and auditory data for the formation of concepts, very difficult.

4. Looking now at studies in verbal intelligence and comprehension, these studies were certainly not 'culture fair', but show us, nonetheless, that if Aboriginal people are to succeed in comprehending what they read it must be written, to begin with at least, in the language they best understand. This is in most cases either a vernacular, creole or a non-standard English. The use of standard English makes comprehension very difficult for the Aboriginal learner, many of whom do not grasp the basic word/concept correlation or the grammatical patterns needed for understanding.

5. Literature must also be carefully prepared so as not to deal with causal, scientific, mathematical-logical and non-cultural concepts until schooling and experience has enabled the learner to develop the necessary skills to cope with these ideas. Literature for adults who may never have a chance to develop facility in these non-Aboriginal modes of thinking may need to avoid such topics altogether if it is to really communicate and thus be useful as teaching/learning material.

All this gives strong support for the use of the language experience approach in teaching Aboriginal people to read and shows also the need for the use of Aboriginal-authored materials dealing with familiar subjects. Translated material should not be used until later in a programme, with fluent readers, and then only when the translator has been careful to write from a cultural point of view. For this reason translators should ideally be native speakers of the language.

All in all we may assume that many Aboriginal people, children and adults, will find western type schooling difficult if not impossible. They may also find the approaches taken by teachers threatening, rude or foreign. Reading will be, in all probability, more difficult and the subject matter about which they read unfamiliar, and the task therefore largely unrewarding. If Aborigines are to succeed, literacy programmes will need to capitalise on Aboriginal cognitive strengths and build Aboriginal non-strengths. But more than this they will need to attend to a multiplicity of other factors which might come under the heading of motivation. Literacy workers dare not neglect the concept of functionalism. Unless people can see some value in learning to read they simply will not attempt this formidable task. Any literacy programme must provide something for the people to read that they want to read, present it in a way that is attractive, and aid the would-be learner by giving him the help to learn that he as a unique individual from a unique culture needs.

It appears that attempts at reading education have by and large failed Aboriginal people. What is needed is a culturally, intellectually and functionally relevant approach to reading education. Behind such an approach there will need to be extensive research. I believe that there are real dangers in educationalists relying too much on research based on a cognitive or developmental psychological model to provide the basis for their programmes. More and more the work of anthropologists, linguists, sociologists and others needs to be closely considered along with psychologists from various theoretical backgrounds. More and more professional researchers need to consider the intuitions and experience of teachers and literacy workers who have learnt by 'bitter experience'.

5. SOME AREAS FOR CONTINUED RESEARCH

From the material presented in this paper it is apparent that Aboriginal people, whether it is due to their functional learning system, cognitive style or some other factors not yet uncovered, are different from non-Aboriginal people in their profile of cognitive abilities. It is likely that these differences will make learning to read by the typical approaches taken in most schools and adult education programmes difficult, if not impossible, for a good proportion of Aborigines. While considerable research has been done into Aboriginal cognitive abilities, much of this is of a theoretical nature and the practical application of the results of this work is still far from clear. It is necessary now for a great deal of research to be directed toward practical rather than theoretical ends if we are to know the best ways to teach Aborigines to read. What topics need to be researched? What investigatory model should be used? Who should undertake this work? These are some questions that need answering now.

What do we mean by practically orientated research? The present writer believes that we need not only a strong emphasis on research directed towards supporting psychological theory, as for example the work designed to explore cognitive styles or cognitive development, but there is also a need for work which sets out with the express purpose of looking at reading-related intellectual ability with the aim of helping the teacher and literacy worker better understand the people he is teaching. Careful, well designed studies are needed, but so also is less formal, less controlled research which will give the practitioner and researcher ideas now. Experienced teachers and other personnel involved with Aborigines need to be observing, recording their observations and writing them up in a publishable form for others to read. People who are teaching Aborigines need to stand on each others shoulders, as it were, and not go on discovering and rediscovering and re-rediscovering without sharing the results of their labours.

There seems to be a real case for the use of a variety of investigatory approaches in research. Steven Harris, using a non-psychological approach for the bulk of his work, has pushed educationally orientated research for Aboriginal programmes in a different direction. Many teachers, linguists, literacy workers and adult educators could well emulate Harris's approach to research in other communities.

If we take the materials presented in sections 2 to 4 of this paper, comparing the studies done overseas with those done in Australia in the light of the apparent abilities needed to succeed in the task of learning to read, we may be able to pinpoint some of the more specific areas where research is needed. We have attempted to list some of these below.

1. In the visual-perceptual area, research into Aboriginal visual and visual-spatial abilities of a specifically reading-related nature is needed. So, for example, form perception, visual copying, visual rhythm, visual sequencing, visual discrimination, visual decoding and part-whole relationships should be put under scrutiny. Some informal observations described by Joy Sandefur (see paper in this volume) suggests that there may be real differences between Aboriginal and non-Aboriginal perception of illustrations.

2. Studies in the audio-vocal area are essential if we are to discover the extent, if any, of Aboriginal problems here. These should include work on auditory decoding both in English and the vernacular, auditory vocal association, vocal encoding, auditory sequencing and rhythm, appreciation of rhyme, blending and discrimination of letter sounds. The ability to reproduce auditory patterns should also be tested.

3. The possible motor strengths of Aborigines need exploration. Such abilities as the recognition of motor patterns and differences, copying from a model and many others need to be carefully examined.

4. Sensory integration including the visual, auditory, kinaesthetic, motor and haptic spheres are almost wholly untouched by research into Aboriginal abilities. Overseas studies suggest that there are differing rates of development of integration between the senses for different cultural groups. If this is so then it is possible that work is needed in this sphere.

5. Of particular importance is the need to ascertain what is the optimum age at which reading education should begin for Aboriginal children. Both with children and adults there is a need to be able to decide when intellectual growth has proceeded to a point where reading is possible. Without such information there are likely to be disastrous and discouraging failures. Pre-reading material and reading readiness tests sensitive to Aboriginal needs must be developed. These should be based fairly and squarely on our knowledge of Aboriginal cognitive profiles.

6. Memory is a key factor in reading and is obviously another important topic. We need to know how general Kearins's (1976) findings in visual memory are and perhaps how they are related to any abilities in eidetic imagery. We need also to explore the structuring of Aboriginal memory. How can memory in Aboriginal people be aided? What kinds of groupings, associations and so on will help them to remember best? Clearly there is need to explore not only visual memory but also the auditory and other abilities in memory used in reading.

7. A flexible approach to thinking using a variety of thinking abilities seems to be necessary to develop reading fluency and even to grasp phonic rules. This whole area needs careful exploration. What are Aboriginal strengths in reading-related thinking processes? The practical experience of some who are working in the field of reading education for Aborigines seems to suggest that there are problems, especially for children, in using analogical inference to arrive at conclusions. (This statement is based upon information gleaned in a series of interviews of Summer Institute of Linguistics personnel in 1978 and from personal discussions with teachers of Aboriginal children). We need to know if this is a general problem with all Aboriginal groups or only with some. We also need to know if this is a problem for adults or if it is related to cognitive development or a later pattern of cognitive development and therefore only a problem for some. Studies give evidence of a high dependence upon perceptual data in thinking and also of a preference for known rather than given data. We need to know to what extent this will stop the Aboriginal reader from building new concepts from information he reads.

8. Studies in conservation, classification and so on leading to conclusions about the level of cognitive development are fairly plentiful. What is not clear is the extent that a low level of cognitive development will restrict an Aboriginal person from learning to read if he really wants to.

9. Then there is the vast subject of encouraging cognitive development. What right have we to push for a change in cognitive profile which will ultimately mean that an Aboriginal will develop a more western style of thinking? If we allow it to be a morally acceptable thing to do, how can conservation, causal thinking, logico-mathematical concepts and abstract classification be built into the Aboriginal functional learning profile and his other strengths still retained?

10. It is not within the scope of this paper to consider vital non-cognitive factors such as motivation. This is also a question very much in need of research. What factors will motivate Aboriginal people to learn to read? How much do apparent non-strengths in cognitive abilities for learning to read really matter to a person who is highly motivated to learn?

11. Another important subject is that of the matching of mental abilities, approaches to learning and cultural DOs and DON'Ts to the teaching methods used in reading education. Clearly if socio-cultural and socio-linguistic factors are ignored no amount of psycho-educational understanding is going to help.

Perhaps the most important question that needs to be answered is simply, 'Why should I teach Aboriginal people to read?' Unless the reading educator can give his Aboriginal students a convincing answer to this question then he is probably wasting his time.

FOOTNOTES

1. Since this paper was written, Harris's 1977 dissertation has been abridged and published as *Culture and Learning: Tradition and Education in Northeast Arnhem Land* (Northern Territory Department of Education, Darwin, 1980). While the dissertation gives a much more detailed account of Harris's research, the material referred to in this paper (often from Harris's 1978 summary) is fully presented in the abridgement.

APPENDIX

TESTS REFERRED TO IN THIS PAPER

Illinois Test of Psycholinguistic Abilities (I.T.P.A.) This test was designed by J.J. McCarthy and S.A. Kirk and first published by the University of Illinois in 1961. The test uses a case study approach. It gives a psycholinguistic profile showing comparative strengths and weaknesses in the ten different subtests. These are:

Auditory reception	Manual expression
Visual reception	Grammatic closure
Auditory association	Visual Closure
Visual association	Auditory sequential
Verbal association	Visual sequential

According to Tansley (1967:115-119) these subtests measure nine different reading-related abilities (see section 2.2 of this paper).

Marianne Frostig Developmental Test of Visual Perception (F.D.T.V.P.) is published by Palo Alto, California: Consulting Psychologists Press. This has five subtests (see section 2.3 of this paper) which are designed to identify the level of achievement of younger children in each of the subtest areas.

Peabody Picture Vocabulary Test (P.P.V.T.) is an auditory verbal test that has been shown to be valid in both the United States and Australia. The test yields a measure of verbal intelligence. As with many tests that have been administered to Aborigines, there are problems in knowing just what is being measured. Brislin (1976) lists some of these problems (see Introduction). The test is published by the American Guidance Service, Inc., Circle Pines, Minn.

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A SUGGESTED STRATEGY FOR AN ALYAWARRA LITERACY PROGRAMME FROM A COMMUNITY DEVELOPMENT VIEWPOINT[1]

Nancy J. Turtle

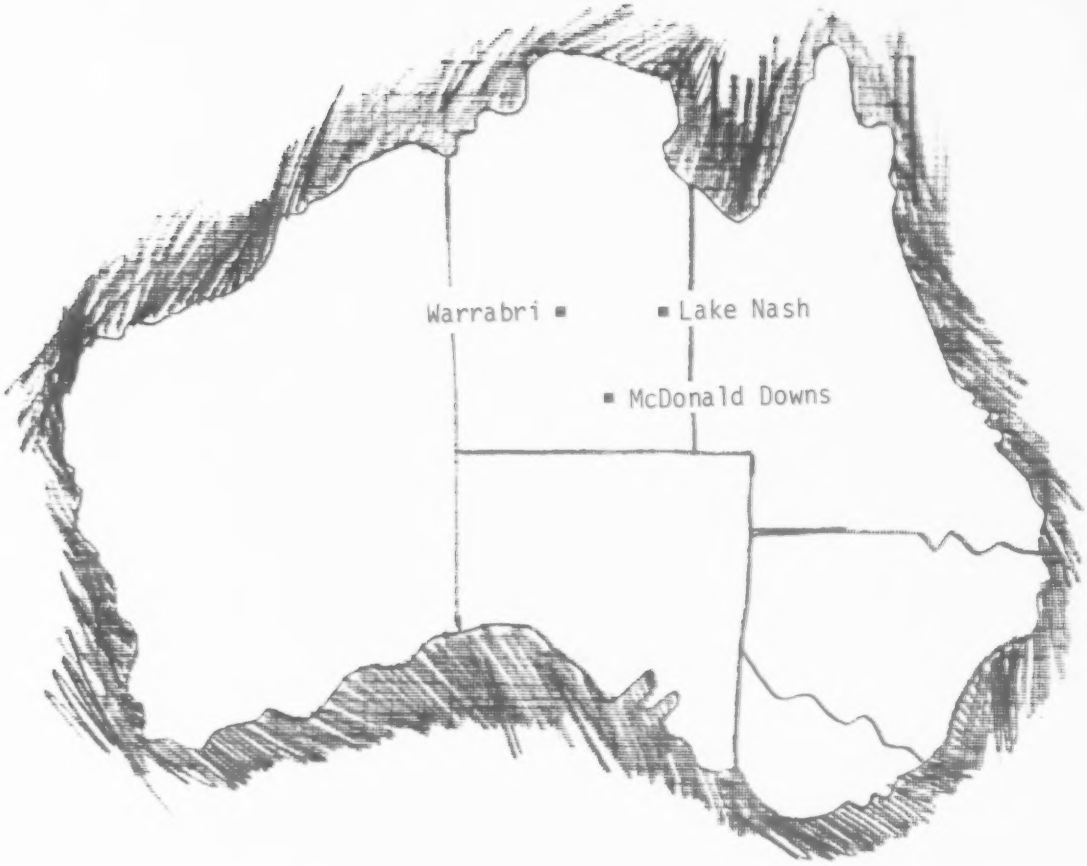
INTRODUCTION

A primary community development (C.D.) principle is that community development is a process not a project. Its aim is to help the people who are being served develop ability to be their own, and increasingly independent, leaders for future development of their community.

The C.D. person or agent should act only as facilitator, leading the people of the community themselves to take charge of the programme as far as possible, if only through their involvement as decision makers at certain stages, as compared to their more active participation at others. Any C.D. effort, to be fully successful, must be in response to a felt need of the people in question, whether that need is truly felt or whether it is an underlying need of which the people can be made aware through the facilitator's help, i.e. by 'uncovering' the underlying need.

The successful C.D. effort must then belong to the people. The decisions concerning it must be theirs, as well as their involvement as fully as possible in carrying out those decisions, throughout the entire programme. The C.D. person is there only to facilitate. The people of the community are there to decide upon and to help carry out their own programme.

The community in focus for this paper is an Aboriginal one, among the Alyawarra people. The Alyawarra language group, numbering approximately 500-600, is divided primarily between three main geographical centres which form a triangle in the semi-desert interior of Australia, within the Northern Territory. Two of the centres are Lake Nash Cattle Station and McDonald Downs Cattle Station, located at the north-eastern and southern points of the triangle, respectively. The third centre is Warrabri Aboriginal Reserve, located at the north-west point of the triangle. Smaller segments of the population are located on various cattle stations within the triangle.



Alyawarras of most ages have some facility in speaking English, varying with the individual and with age from a very limited facility to that which enables them to cope with fairly mundane day-to-day communication needs. None of the Alyawarras are literate in their own language.

Schools where the curriculum is taught in English are available to the Alyawarra people living at the main population centres. Thus quite a number of Alyawarra children and some younger adults have some facility in reading English.

Some of both Alyawarra men and women hold employment. Men's positions vary from cattlemen, teaching assistants in the English schools, agricultural workers on the small vegetable farm, administration assistants on the Reserve, to grass cutters and garbage collectors. Women's positions include teaching assistants, hospital aids, grocery store clerks and domestic aids for white families. It is evident that employment relationships alone require a fairly consistent

contact between the Alyawarras and the white segment of the various communities' populations. Approximately 95-100% of the communication between these two groups is through English. The various types of communication involved include communication between the government and the Alyawarras, legal communication, financial communication (paychecks, price tags, etc.), educational communication (oral or written), church ministry, entertainment communication (movies, radios, tape recorders) and various written notices.

In light of the above, the writer feels there is a need for better communication between the Alyawarras and the dominant white society. Better communication would help the Alyawarras more effectively determine their own destiny. With self determination as the ultimate goal, this paper will be specifically concerned with what the writer considers a first logical objective toward reaching that goal, namely a strategy for helping the Alyawarras become literate in their mother tongue.

As an observer in the Alyawarra communities on a semi-regular basis since 1972, this writer feels that there is a need for the Alyawarra people to gain literateness in their first language,

a. As a bridge to learning more effectively their second language, English

b. To provide a firmer foundation for the Alyawarras as they face the challenges of a dominant culture and society by building pride in their own language and traditional culture, and preserving their sense of dignity

c. As a means to gaining a more dynamic understanding of the Scriptures when they become available to them in the vernacular.

It is recognised by most literacy experts that learning to read in the language that one knows and speaks best is more easily accomplished than learning first to read in a second language. The theory behind this is that the learner is dealing with only one unknown at a time. Knowing how to read in one's first language also makes it easier to learn the second language fluently. This greater facility in English would better enable the Alyawarra people to cope and relate where the various types of communication with white society are concerned. It would also open up to the Alyawarras the whole world of literature available to them only in the English language, providing for them a potentially broader general education, whether through private study or through formally taught curriculum.

Learning to read in their own language would also increase pride and preserve dignity for the Alyawarras where their own language

and culture are concerned. This would likely be especially, but not solely, meaningful to Alyawarras beyond the age of those who have been able to gain some literateness in English in the schools. These advantages together would aid the Alyawarras in determining their own destiny. The writer believes further that deeper understanding of the Christian Scriptures would help them determine not only their spiritual destiny, but also their earthly destiny in many senses, e.g. more peaceful human relationships and the potential fulfilment of their whole individual persons. Such a deeper understanding of the Scriptures will be possible when the Alyawarras can read them in their own language.

SUGGESTED STRATEGY

Following is a step-by-step strategy suggested from a community development point of view as an approach to a literacy programme for the Alyawarra people. References are made to the Action Chart at the end of the paper which serves as a guide as well as a checklist for each step. A primary resource used in this approach is Gudschinsky, *A Manual of Literacy for Preliterate Peoples*, hereafter referred to as the Manual.

The term 'literacy worker' is used in a broad sense to refer to anyone involved in starting or maintaining a literacy programme in an Aboriginal community, even though that may not be their primary area of training and responsibility. Any literacy worker who intends to follow this suggested strategy for another Aboriginal group should keep the following in mind:

a. The extent and type of consultation with government departments and officials will depend on the relationship between the government and the organisation sponsoring the literacy worker.

b. Consultation by the literacy worker with any white official (government, mission, community employees) should be done with the prior knowledge and consent of the Aboriginal people involved. Their participation and input should be sought in such consultations.

c. Information needed for this approach should be gained through culturally acceptable means, whether interviews with individual key people, cross-section interviews by age and sex, group discussions or other.

d. During and after the completion of each step outlined, the action and process involved should be evaluated as shown on the Action Chart as to whether or not the objectives for that step have been reached and why or why not. Notes should be recorded specifically for future reference and application where relevant.

STEP 1 BUILD BACKLOG OF MATERIAL FOR INDEPENDENT READING STAGE OF A LITERACY PROGRAMME

Building a backlog of material for the independent reading stage of a literacy programme is suggested as a first step in approaching a literacy programme (i.e. even before determining the felt needs of the community) for the following reasons:

a. To get the interest and enthusiasm of the community aroused for a literacy programme sometime before the programme is ready to be implemented may very well result in frustration and disillusionment on the part of the community members. If this happens, it is difficult to re-arouse that enthusiasm.

b. An important part of uncovering motivation is exposure to literature that is interesting to the people in question.

The technique used for collecting texts for such literacy material will be the usual method of tape recording and transcription. More specific techniques for obtaining quality texts are to be found in the Manual.

STEP 2 DEVISE AND TEST PRACTICAL ORTHOGRAPHY

Devising and testing a practical orthography should also be done before arousing community-wide interest in a literacy programme for the same reason as noted under Step 1a, and for the obvious reason that it will be needed before the literature backlog can be prepared. It should be tested quietly and with a minimum number of people, yet with enough that the testing will be effective and the results accurate.

The technique used for this step will be according to that in the Manual.

STEP 3 GATHER INFORMATION CONCERNING PROBLEM AND NEED

It is not known at this point whether better communication between themselves and the dominant white society, or whether achieving literateness in any language, whether the vernacular or English, are felt needs amongst the Alyawarra people. This would need to be determined first before launching out into a literacy programme. The method of determining this would probably be through verbal questioning of the key people of the Alyawarra community if they can be determined, and, if culturally acceptable, of a cross-section of the community age- and sex-wise. A second method of determining this would be through observing interest in various forms of literature. Some of this has already been done, with

favourable responses. For instance the response of various Alyawarra to hearing expressions in their own language read off cards was one of surprise and delight. The same response came to an attempt at substituting some Alyawarra words while reading a short Bible story, printed in English, to a group of Alyawarra people in their camp. These people's interest in literature is shown, too, by the frequency with which they come to the writer's home to look at books. During these times they will often ask to have the English captions read to them.

However, more research would need to be done to determine more accurately the presence of a felt need in the area and what percentage of the community feels the need. If the discovery is that the need is not felt by the community, the writer feels that the next step should then be one of further uncovering motivation. The full procedure and skills for such a step are not known by the writer, but it seems logical that part of such an attempt would be in providing as much information relating to the advantages of literateness as possible. However, this should be done in a way that avoids giving the impression of trying to persuade the people involved to adopt and follow one's own opinion and desires. It must be *their* decision, not that of any outsider. Until the decision *is* theirs it is advisable, from a community development point of view, to postpone the literacy programme.

For the purposes of this paper, however, the assumption will be made that the need for literateness is felt by the community and that a vernacular literacy programme is of their choice.

STEP 4 CONSULT APPROPRIATE GOVERNMENT OFFICIALS

See Action Chart.

STEP 5 GENERATE SOLUTION IDEAS FOR A GENERAL APPROACH TO A LITERACY PROGRAMME / REFINE IDEAS TO ALTERNATIVES AND LIST SPECIFICALLY

The sort of action envisaged for this step would need to be primarily between the literacy worker, the key people in the Alyawarra community and, if culturally acceptable, a good percentage of the Alyawarra people over a cross-section of age and sex. Input from any local Education Department officials and/or teachers would also be sought.

Part of the method for this action may be to provide information for the Alyawarras concerning possible approaches such as:

a. One-to-one teaching (each one teach one)

b. Group classes

c. Teaching literacy teacher(s) to teach

d. Literacy worker teaching everyone

e. Local school teachers teaching everyone

f. d. or e. with Alyawarra teaching assistants

However, in addition to possible approaches given (and even before such information is offered), as many ideas as possible should be elicited from the Alyawarra people themselves and pooled with all information, to be considered carefully in the process of arriving at various alternatives.

STEP 6 EVALUATE SPECIFIC SOLUTION ALTERNATIVES, MODIFYING AND COMBINING AS DESIRED / SELECT A TRIAL ALTERNATIVE

See Action Chart.

STEP 7 SEEKING GOVERNMENT APPROVAL OF CHOSEN TRIAL ALTERNATIVE

See Action Chart.

STEP 8 GENERATE SOLUTION IDEAS CONCERNING DEVELOPMENT OF ADOPTED TRIAL ALTERNATIVE / REFINE IDEAS TO ALTERNATIVES AND LIST SPECIFICALLY

Action involved in this step would be primarily between that segment of the Alyawarra community who have expressed the desire to become literate and the literacy worker. However, it may be wise for rapport to consult also with the key Alyawarra people if they are not included in the above.

The types of information to be gathered during this step include the following:

I. ADMINISTRATIVE INFORMATION

A. Who should be the first students?

1. Men (what age group?)
2. Women (what age group?)
3. Boys
4. Girls
5. Men and women (what age group?)
6. Boys and girls

B. If Alyawarra teachers are going to be trained, who specifically will they be?

C. Who should teach/conduct classes?

1. If Alyawarra teachers are going to be trained, who should teach/train them? How?
2. If Alyawarras are going to act as teaching assistants, who specifically will fill the role?

3. Other?

D. How many students per class

1. If Alyawarra teacher training is to be the approach?
2. If the approach is to be group classes?
3. If another approach?

E. Where should classes be held?

1. Alyawarra camp area?
2. Local school? (inside or out?)
3. Literacy worker's home? (inside or out?)
4. Other?

F. When should classes be held?

1. Morning?
2. Midday?
3. Evening?
4. Other?

G. Who will finance the programme?

1. Alyawarras?
2. Government?
3. SIL?
4. Combination of above?

H. What provisions will be made for informal or formal pre-reading activities?

1. Who will conduct them?
2. Who will be participants?
3. Where will they be conducted?
4. When will they be conducted?

I. Who will develop needed literacy materials?

1. Literacy worker?
2. Local teachers?
3. Alyawarra people?
4. Combination of above?

J. Who will illustrate primer and independent reading materials?

1. Alyawarra people? Who specifically?
2. SIL artists?
3. Local teachers?
4. Other?

K. Who will do printing of literacy materials?

1. Alyawarra people? Who specifically?
2. Local school personnel?
3. SIL?
4. Private enterprise printers?
5. Combination of above?
6. Other?

L. If Alyawarra people are to do the printing (typing/duplicating/mimeographing) with what facilities and equipment will it be done?

1. Help them set up their own facilities, equipment?
2. Use of local school facilities?
3. Use of SIL facilities?

M. Who will be publishers of tested literacy materials?

1. Government?
2. SIL?
3. Other?

II. CONTENT INFORMATION

A. What materials are needed?

1. Pre-reading materials

a. What types?
b. What quantity?
c. Where to obtain?

2. Primer materials

a. How many in series?
b. What quantity of each separate primer?
c. Style, shape, size of primers?
d. Colour of materials (covers, etc.)?

3. Graded readers

Same as for 2

4. Teacher aid materials

a. Types?
b. Quantity needed?

5. Bridge materials

a. Materials for teaching oral English?
b. Transition (vernacular to English) primer materials?
c. Math lessons?

STEP 9 EVALUATE SPECIFIC SOLUTION ALTERNATIVES, MODIFYING AND COMBINING AS DESIRED / SELECT TRIAL ALTERNATIVE

See Action Chart.

STEP 10 PREPARE INSTRUCTIONAL MATERIALS AND TEACHERS' GUIDES

As the Manual states, the instructional materials and teachers' guides should be prepared simultaneously so that thought can be

given to how to teach each page as it is planned. The technique recommended in the Manual should be followed, outlining the entire series of primers and guides first and then working each lesson out in detail.

STEP 11 PREPARE BRIDGE MATERIALS

Any needed bridge materials should be prepared following the same technique as for primers and teachers' guides (see Step 10).

STEP 12 TEST MATERIALS, REVISING AS NECESSARY

The testing of materials should be done with only a small group of pupils to avoid arousing too much interest before the literacy programme is ready to be implemented.

STEP 13 PUT THE FULL PLAN INTO EFFECT

This step includes publishing of tested materials and proceeding with classes as planned during Steps 5 and 8. This step will require a number of sub-steps which are beyond the scope of this paper. Before the full literacy plan is implemented, each sub-step should be carefully mapped out, following the same procedure used up to this point. As the Manual points out, special attention should be given to the timing of the entire programme so that pupils will be able to successfully complete the course without major interruptions to the programme.

EVALUATION OF THE PRODUCT AND THE PROCESS

When the total strategy has been planned, in addition to the step-by-step evaluation that is done during the planning process (as shown on the Action Chart), a final evaluation of the end results and the process used should be made. Questions which may help in the evaluation are:

A. What We Did

1. Was information about the effects of actions collected as planned and made available to all group members?
2. Is the group able to compare, in detail, the outcomes with the objective set earlier?
3. Can the group determine whether any new problems were created and then set plans to deal with these new issues?
4. If based on the evaluation the problem was not resolved, did the group return to earlier proposed solutions and set new action plans?

5. If based on the evaluation the problem was successfully resolved, did the group consider what further actions, if any, would be needed to keep the problem from reappearing?

B. How We Did It

1. Were all group members involved in influencing both what the group did and how the group operated?

2. To what extent were the communications in the group open, expressive of real feelings, and understood by all group members?

3. Were group members supportive of the ideas and feelings of one another throughout the problem-solving process?

4. At various appropriate points did the group members openly discuss and critique how the group was working? (i.e. critiquing the process).

5. To what extent has the group learned to solve problems with the process detailed in this questionnaire? [i.e. as used in this paper]. Is the group able to effectively use this problem-solving process in future work?[2]

It is hoped that as a result of planning the strategy for this literacy programme the Alyawarra people will not only be on the verge of becoming literate, but that they will be better able to plan toward and reach solutions to other problems which they recognise in their society and feel the need for correcting.

ACTION CHART

	ACTION STEPS	RESOURCES/EXPENSES*	WHO RESPONSIBLE ?	EVALUATION	WHO RESPONSIBLE EVALUATION?	MEET OBJECTIVES?
Step 1	Build backlog of material for independent reading stage of programme	a. Alyawarra language helpers	Literacy worker	a. Have a variety of language helpers been used as sources for texts so that all the reading materials are not limited to one author?	Literacy worker	
		b. *Manual* pp. 3-5, 12-21		b. Have a variety of types of texts (i.e. content) been used in building the backlog to provide for interesting literature?		
		c. Literacy worker's salary		c. Has enough backlog been built to prevent disillusionment of new readers due to lack of continuing reading material?		
		d. Equip. (tape recorder/tapes)		d. What was the effect of this action? Good? Adverse? Were any adverse effects dealt with satisfactorily? How?		
		e. Materials (paper, etc.)				
		f. Printing costs (perhaps only carbon copies/duplicating/ mimeographing until materials are tested), including printing equip.	Literacy worker			
		g. Alyawarras' salaries				
Step 2	Devise and test a practical orthography	a. *Manual* pp. 5, 116-135		a. Is the testing being done quietly with a minimum number of people to avoid arousing wide community interest at too early a stage?		
		b. Alyawarra people (limited number)		b. Have all principles and procedures contained in the *Manual* been carefully followed in devising and testing the orthography?		

* Though not done in this chart, approximate figures for all expenses should be listed as a part of each Action Step.

	ACTION STEPS	RESOURCES/EXPENSES	WHO RESPONSIBLE?	EVALUATION	WHO RESPONSIBLE EVALUATION?	MEET OBJECTIVES?
Step 3	Gather information concerning problem and need	a. Alyawarra people - Key people of community if they can be determined, and (if culturally acceptable) a high percentage of community members, cross-sectionally age- and sex-wise b. Literacy worker's salary c. Materials	Literacy worker	a. Have the key people of the community been determined? Has each one been consulted? b. If key people cannot be determined, and providing it is not against cultural custom, has a cross-section of the community been consulted to obtain their thinking and opinions? Has anyone been excluded who should have been consulted? c. Is it a felt need by the Alyawarras to improve communication between themselves and the white segment of society? What percentage of the community feels the need? d. Is it a felt need by the Alyawarras to become literate in their mother tongue? By what percentage of the community? e. As for Step 1d.		
Step 4	Consult with appropriate government department(s) regarding vernacular literacy programme	a. Government b. Postage/telephone and/or travel	Literacy worker and/or SIL administration	a. In what way should the government be consulted? b. Is the government sympathetic to the felt need of the Alyawarra for improved communication between themselves and English speakers? c. Is the government sympathetic towards a felt need for a vernacular literacy programme as a first step toward meeting that need? d. As for Step 1d.	Literacy worker and/or SIL administration	

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	ACTION STEPS	RESOURCES/EXPENSES	WHO RESPONSIBLE?	EVALUATION	WHO RESPONSIBLE EVALUATION?	MEET OBJECTIVES?
Step 5	Generate solution ideas for a general approach to a literacy programme / refine ideas to alternatives and list specifically	a. As for Step 1, a-c b. Local Ed. Dept. official and/or teachers	Literacy worker	a. Is information being gathered in a culturally acceptable way, i.e. through the appropriate channels, etc.? b. According to a, is everyone (including the more shy members) being encouraged to express his ideas? c. Are all ideas being accepted without criticism (criticism tactfully discouraged and evaluative comments postponed)? d. When all ideas have been gathered, has the list been reviewed in detail, items clarified, and ideas expanded or added to where and if necessary?	Literacy worker	
Step 6	Evaluate specific solution alternatives, modifying and combining alternatives as desired — select trial alternative	a. Aiyawarra people (as culturally acceptable — see Step 3) b. Local Ed. Dept. official and/or teachers c. Literacy worker's salary	Literacy worker	e. Has the group examined and combined various ideas into a number of specific, clearly-stated alternatives? f. Is the group being fully co-operative in arriving at specific alternatives (is domination of the group by any one member being prevented and full encouragement given to all members to voice ideas and opinions)? g. Is everyone fully aware of the final alternatives selected (i.e. has a visual list of them been made available or have they been made clear orally)? h. As for Step 1d. a. Have all essential Aiyawarra people been consulted? Key people? As many as culturally permissible? b. Is each solution alternative being examined and discussed according to data which will either support or contradict the solution? c. Are solution alternatives being analysed in a supportive rather than attacking way (i.e. in such a way that the 'best' rather than the 'worst' of each solution is being noted)? Are feelings of rejection being minimised? d. Are the solution alternatives being modified and combined to form an improved final set of solution alternatives? e. Is everyone's opinion being given fair and considerate hearing?	Literacy worker	

	ACTION STEPS	RESOURCES/EXPENSES	WHO RESPONSIBLE?	EVALUATION	WHO RESPONSIBLE EVALUATION?	MEET OBJECTIVES?
(Step 6 cont.)				f. Has group selected a final trial solution alternative after thoroughly discussing its potential outcome? g. In selecting the trial alternative was a true group concensus reached (i.e. were all differences recognised and satisfactorily resolved)? h. How well was the selected solution related to the problem statement, the need, and the group objective(s)? i. Is Ed. Dept. agreeable to adopted solution? j. As for Step 1d.		
Step 7	Seek approval of appropriate government dept.	a. Government b. Postage/telephone and/or travel	SIL administration and/or literacy worker	a. Is Government in agreement with adopted trial solution? b. As for Step 1d.	SIL administration and/or literacy worker	
Step 8	Generate solution ideas concerning development of adopted trial alternative (i.e. vernacular literacy programme); refine ideas to alternatives and list specifically	a. Alyawarra people (as culturally acceptable) — all those who have expressed the felt need to become literate; key people of Alyawarra community if they are not included in above but are sympathetic towards those who do want to become literate, and if it is felt wise for sake of rapport to consult them. b. The *Manual* c. Local Ed. Dept. official and/or teachers d. Local mission personnel (if involved in education or vernacular work)	Literacy worker	a. As for Step 5 above	Literacy worker	

	ACTION STEPS	RESOURCES/EXPENSES	WHO RESPONSIBLE?	EVALUATION	WHO RESPONSIBLE EVALUATION?	MEET OBJECTIVES?
(Step 8 cont.)		e. Literacy worker's salary f. Materials		a. As for Step 6, a-j. b. Are those consulted (government, local teachers, mission personnel) in agreement with chosen trial alternative?	Literacy worker	
Step 9	Evaluate specific solution alternatives arrived at under Step 8, modifying and combining alternatives as desired — select trial alternative	a. As for Step 8	Literacy worker	a. Have plans determined during Step 8 been followed as to who should develop, illustrate, and print literacy materials, and what quantity, style, etc. finished product should take? b. Have principles and procedures contained in the *Manual* been carefully followed?	Whoever is responsible for Step 10 as determined during Step 8	
Step 10	Prepare instructional materials and teachers' guides	a. *Manual*, pp. 73-108, 143-174 b. SIL literacy consultants c. Materials d. Printing costs e. Literacy worker's salary f. Possible Alyawarra salaries	As determined during Step 8	c. As for Step 1d.		

	ACTION STEPS	RESOURCES/EXPENSES	WHO RESPONSIBLE?	EVALUATION	WHO RESPONSIBLE EVALUATION?	MEET OBJECTIVES?
Step 11	Prepare bridge materials	a. SIL literacy consultants (if SIL member is responsible for this step) b. Local school teachers (if they are responsible for this step) c. Materials d. Printing costs e. Literacy worker's salary f. Possible Aiyawarra salaries	As determined during Step 8	a. As for Step 10	Whoever is responsible for Step 11 as determined during Step 8	
Step 12	Test materials with small number of pupils, revising as necessary	a. *Manual*, pp. 25ff. b. SIL literacy consultants (if SIL member is teaching) c. Local school teachers (if they are teaching) d. Aiyawarra pupils	As determined during Step 8	a. Have all problems been recognised and revised to satisfaction in consultation with all concerned? (i.e. all human resources in Resource column under this step) b. Were pupils used for testing in accordance with decisions made during Step 8 concerning who should be first students? c. Were the specific pupils used for testing chosen in consultation with the Aiyawarra community who have expressed the desire to become literate? d. As for Step 1d.	Whoever was determined during Step 8 to be responsible for Step 12	

	ACTION STEPS	RESOURCES/EXPENSES	WHO RESPONSIBLE?	EVALUATION	WHO RESPONSIBLE EVALUATION?	MEET OBJECTIVES?
(Step 12 cont.)		e. Literacy worker's salary		a. Have principles and procedures contained in the *Manual* been carefully followed? b. Have plans and decisions determined during Step 8 been followed as they relate to any specific sub-steps under Step 13? c. As for Step 1d.	Whoever is responsible for Step 13 as determined during Step 8	
Step 13	Put the full plan into effect: publish the materials and proceed with teaching as planned during Steps 5 and 8	a. *Manual*, pp. 25-72 b. SIL literacy consultants (if SIL member is involved) c. Literacy worker's salary d. Alyawarras' salaries e. Publishing costs —? f. Will need to determine more resources according to each specific sub-step required under this step, as they are mapped out	As determined during Step 8			

FOOTNOTES

1. This paper was first written in 1977 as part of a course in community development principles undertaken at the Summer Institute of Linguistics, University of Oklahoma, Norman, Oklahoma, USA. The paper was a fulfilment of a course assignment rather than a research project as such, and was to illustrate ability to apply the community development principles taught during the course. The procedure followed in planning the strategy suggested in this paper was taken from Morris and Sashkin, pp. 3, 235-45.

2. This list of questions has been taken directly from Morris and Sashkin, p. 245.

REFERENCES

GUDSCHINSKY, Sarah C. 1973. *A Manual of Literacy for Preliterate Peoples.* Ukarumpa, Papua New Guinea: Summer Institute of Linguistics

MORRIS, William C. and Marshall SASHKIN. 1976. *Organization Behavior in Action, Skill Building Experiences.* New York: West Publishing Co.

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VERNACULAR LITERACY FOR WARLPIRI ADULTS

Beverly Swartz

0. INTRODUCTION

My interest in adult literacy has come about as my husband and I have lived for the past two years on the Aboriginal settlement of Lajamanu. Lajamanu is located in the Northern Territory about 700 kilometers southwest of Darwin, on the edge of the Tanami Desert. Most of the Aborigines living there are Warlpiris. In all, there are approximately 3,000 Warlpiri speakers living on settlements in the Northern Territory. At Yuendumu, the largest Warlpiri settlement, there has been a bilingual education programme for five years in the school. For Warlpiri children, this involves only reading in their own language with the rest of their education being conducted in English.

Most of the Warlpiris at Lajamanu over forty years of age are illiterate. Those under forty have had the opportunity of a partial European-type education, many of them receiving their schooling at Yuendumu. All the education has been in English and most can read English to some degree. Yet comprehension remains very limited, for English is still a second language for them.

This paper outlines, firstly, my reasons for believing that adult literacy in the vernacular would be beneficial for the Warlpiris. Secondly, the paper briefly outlines Aboriginal-European cultural differences that affect teaching methods and also differences in teaching methods for adults and children, with particular reference to the Warlpiris. Finally, there is a discussion of a few teaching methods that may be useful in an adult vernacular literacy programme. Although the paper is written with a specific group - Warlpiri adults - in mind, the ideas presented may have application to other Aboriginal or minority groups.

1. BENEFITS OF VERNACULAR LITERACY FOR WARLPIRI ADULTS

The primary reasons that I feel adult vernacular literacy would be of value to the Warlpiri community are 1) preservation of Warlpiri culture
2) interest in children's education
3) understanding of Christian teaching and Scriptures
4) political awareness and
5) transference from the vernacular to English.

I will go into these points each in detail.

1.1 PRESERVATION OF CULTURE

The process of change in which European culture is being pushed onto the people from all sides often means their own culture is pushed into the background. Kath Walker, the well-known Aboriginal writer, says that as they throw away their own culture and way of life they become 'black replicas of a white race ... All that this has succeeded in doing is to swell the ranks of the Aboriginal fringe-dwellers who are learning about the European's way of life from the rejects of that society' (Walker 1969:104). Vernacular books on folklore, living and hunting customs and other areas of Warlpiri culture would help to give the same prestige to their language as English. English could never communicate these things as clearly as can the Warlpiri to a Warlpiri speaker.

1.2 INTEREST IN CHILDREN'S EDUCATION

Adult literacy would stir an interest within the community for the education of their children. Children's attendance in the local school is very sporadic. Many children are not encouraged by their parents to attend school. If the children are told to go to school it is more to get them into some supervised activity than for the educational benefits.

This could be because the adults that previously attended the English school have seen little benefit from the education they received. W. H. Edwards quotes a UNESCO report that 'Adults will be less interested in literacy as an end in itself and "will continue to learn only as he sees that his literacy will further his economic, social, or cultural improvements"' (Edwards 1969:284). If adults see that literacy will improve their situation they may encourage vernacular literacy, and also education in general, for their own children. It has been found that two to three years of literacy in the vernacular

aids in switching to the national language, but without the encouragement from their parents the children may not be inspired enough to learn. The Northern Territory Department of Education has a policy that they will not begin bilingual education in the school at Lajamanu until the adults show that they are behind the programme. I don't feel this will happen until the adults themselves are literate in the vernacular.

1.3 UNDERSTANDING OF CHRISTIAN TEACHING AND SCRIPTURES

We are at Lajamanu primarily for Bible translation into Warlpiri; thus we see a real need for teaching and reading the Bible in the vernacular. W. H. Edwards, who is a pastor in an Aboriginal settlement, feels there has been a real failure in establishing strong Aboriginal churches due to not using the vernacular. He has seen the change when people have vernacular scriptures and hymnbooks: they have a better understanding of what Christianity is about and are more confident in sharing their Christian faith with other groups (Edwards 1969:284).

I have seen people who cannot read buying Bibles. They figure there is some magical power in possessing a Bible which will keep them from harm. They do not realise that the words inside are the source of their help. A Bible which they could read and understand would clear up much of this misunderstanding. Also vernacular hymns would be more meaningful than English hymns which are loaded with many English idioms that they have no way of understanding. Mission groups have found vernacular hymnbooks are respected by the people and are not destroyed like books that have no meaning for them. Bible story books and pamphlets would also aid them in reading practice for fluency.

1.4 POLITICAL AWARENESS

The Australian government is trying to get the Aborigines interested in running their own political affairs. At Lajamanu there are many town meetings held concerning some aspect or other of running the settlement. The old men who are supposed to be the decision makers sit in the front. The other groups sit according to their status. The meetings are held in English. One or two of the younger Warlpiris might lead and participate. These few that participate and understand the political system make the decisions while most others go home not understanding what is going on. Even if they do understand somewhat, they realise they have no power over the decision because they do not know how to make their opinion count in this Warlpiri-European political system. This has caused a

breakdown in the culture as far as authority goes. The old men have lost their say and thus they lose the respect of the younger Warlpiri group who feel the elders are too ignorant to ever understand political matters. The old men still have a say in cultural matters, but European culture is bearing in on the settlement at such a rate that the elders are being left in the background.

Vernacular literature and adult literacy would allow pamphlets, posters and newspaper articles to be made so that more could understand the issues for which they gather at the town meetings. With more understanding, decisions would be more apt to be made which would benefit the community rather than a few individuals. This could bring improvements in health, economics and culture retention.

1.5 TRANSFERENCE FROM VERNACULAR TO ENGLISH

The ability to transfer from Warlpiri literacy to English literacy would bring about a better understanding of European culture and politics. This is important if the Warlpiris are going to fit into the ways that are being pushed upon them. ' ... the Aborigine needs more knowledge of the European-Australian way of life and ... he should be encouraged to walk, if he chooses, in these two worlds' (Walker 1969:104).

As stated before, literacy and education which begins in the vernacular is beneficial for learning the national language. Many Aboriginal people taught first in English have never caught on to what reading is about — that it is more than knowing what the words are; it is knowing what the combination of words mean. When the people learn to read for comprehension in the vernacular they will have a much easier task in reading for comprehension in English.

There are other areas where adult literacy would be of value but I will not dwell on these to any extent. These include letter writing between parents and children away at school or between relatives on different settlements and also record keeping in the school and offices.

2. ABORIGINAL-EUROPEAN CULTURAL DIFFERENCES

2.1 LEARNING METHODS

From the time a white child can talk he starts asking questions as to how things work. The process is explained to him verbally and he will try it and continue to ask questions to improve his skill. From this he can adapt easily to the classroom where the teacher

explains how to do something and he follows the directions. We have found that this method is not used by the Warlpiris (nor, we understand, by other Aboriginal groups). In an attempt to get a procedural discourse as part of our linguistic research, the only thing we got was a narrative of what went on while the task was being performed. For instance, we attempted to get a text on how to make a fire with firesticks. Instead we got a story about going hunting, the need to burn a clearing, and then about a fire being started with firesticks. An Aboriginal learns to make a fire by watching it being done and then trying it. Someone may give him advice and coaching while he attempts to do the skill, but most of the learning is through watching and trying until it is achieved satisfactorily. For this reason lecture-type classes are of little value to the Warlpiris. More activity-type learning and teaching techniques would be better.

2.2 CONCEPTS OF TIME

Our European society is time oriented. We usually have the day organised into little slots with specific times for each activity and activities for each time. Aborigines are not time oriented in this sense at all. If they are busy doing something they will continue to do it until it is finished or they get hungry or tired. They eat when they are hungry and sleep when they are tired. Ceremonies and dances often last far into the night with little thought given to the late hour.

For these reasons, rigid class schedules cause many problems such as sporadic class attendance, fatigue or boredom. It may be better to let the students choose the classtime and let each period be loosely enough structured that it can be ended early or extended if the students desire.

2.3 FUTURE VERSUS PAST-PRESENT TIME ORIENTATION

For Europeans, what is done today is often for the benefit of the future. Schooling is for later financial benefit and we Europeans are content to wait for the results. The Warlpiris, as with most Aboriginal groups, are more concerned with the present and past. They are more apt to want immediate results from what they are doing. It is not productive to tell them that if such and such is done now, then the benefits will be reaped at some later date. A literacy course that promised them reading fluency within the year would probably never get off the ground.

We had an interesting experience in this area at Lajamanu. We tried to get the Warlpiri teaching assistants to help start a vernacular reading programme for the school children. We planned to have two to three meetings a week. During the meetings we would help the assistants improve on their reading skills and also get materials ready for starting the programme later in the classroom. After a few meetings, no one showed up except a couple of the European teachers. An explanation for this apparent lack of interest could be that the Warlpiri teachers were not seeing any results from the planning they were doing. My husband tried another programme later in which he and the Warlpiri teacher, Paddy Jangala, started teaching the children from the first day. He had short planning sessions with Paddy before the class. The teaching method was taught right in the classroom. My husband would do it the first time then Paddy would do it next. By using this method, Paddy improved his teaching style. This has worked much better and Paddy is so happy with it that he does a lot of planning alone after the class is over. He can see the immediate benefits of what he is doing and thus is motivated to do more.

This same idea applies to a literacy class. The Warlpiri students want to use the reading skills immediately. It is therefore important that as soon as possible reading be a meaningful activity. Because of this, a sentence method of teaching might be more helpful. Plenty of graded reading material would also be needed to go along with the lessons so that the students would be able to read comprehensible material from the start instead of just word lists and nonsense sentences.

2.4 OTHER DIFFERENCES

There are other differences which could affect a literacy course. Whereas Europeans are competitive, Warlpiris do not appreciate one person trying to outdo the rest. Europeans have a definite idea of what is work and what is play, but there does not seem to be a real distinction between the two for Warlpiris. In fact, they do not have a word to distinguish work from play in their language. This could affect motives for learning and the methods of teaching. Another European-Aboriginal difference becomes apparent in classroom or lecture-type situations. Europeans in such a situation consider it rude to the speaker to talk or engage in other activities. But Aborigines feel free to move around and talk, and they seem quite capable of absorbing at the same time what the speaker or teacher is saying. While to European observers they appear to be rude and paying little attention, they are actually behaving in a culturally acceptable manner.

D. Williams states that 'if Aboriginal education is to be successful, we must have an Aboriginal-centred curriculum based on the needs of

Aborigines. If we attempt merely to fit the Aboriginal child [or adult] to traditional European syllabuses, I think we are doomed to failure' (Williams 1969:26). We Europeans must consider these differences and respect them as we attempt to teach the Warlpiris or any Aboriginal group. Once the people see that we respect them as people and respect their culture they will be more willing to give us as teachers an opportunity to help them read their own language.

3. DIFFERENCES BETWEEN TEACHING CHILDREN AND ADULTS

Children at Lajamanu go to school because of peer pressure, parental enforcement and/or enjoyment. Adults are going to go only if they feel the class is teaching them something and if they enjoy the teaching. If it becomes boring or they are offended with teaching techniques, most of the adults probably will not return. In short, 'Adults are more capable of making value judgments' (Edgington 1976: 38).

Edgington (1976) also brings out the idea that adults are more subject to prejudices and misconceived ideas about teaching and teachers. Part of the learning process will be the re-evaluation of such prejudiced ideas. The literacy teacher will have to do his best to give the adults the education they want without offending them or fulfilling negative expectations they already have. 'A teacher's superiority in skills and teaching ability must not extend to superiority in other qualities. He should recognise in many areas he may be inferior to his students and could learn from them' (Stephens 1971:13). Some European teachers have the idea that Aborigines are simple minded and treat them as children. They do not give them the respect and consideration that should transpire between adults. If this happens, any attempt at a literacy course will fail. A good teacher of adults will possess sensitivity, humility, integrity, sincerity and enthusiasm.

Another point that will be important for teachers to remember is that although adults are intellectually as capable as children, their sensory skills may be worse. Many Warlpiri adults have poor eyesight due to trachoma. They have difficulties in keeping a pair of eye glasses for any period of time so most just learn to live with fuzzy vision. This could cause real problems in reading off the chalkboard or from fine-print books. It would be important to have a clean chalkboard and the writing printed distinctly in large letters. Primers and reading books should also be done on clear paper with large dark print to avoid eye strain.

4. TEACHING METHODS

4.1 SENTENCE METHOD

This method has a synthetic approach. It starts with a sentence which is later broken down into words and syllables. The advantage of the sentence method is that it begins with a comprehensible unit. As I stated before it is important for adults to feel the immediate value of what they are learning. If they feel that they are actually reading something from the beginning it encourages them to keep on reading. In *Read* magazine (no author given) there is a short article on the sentence method which includes the statement, 'Thus by the time one has "built-up" along a line, the all-over thought to be absorbed has been forgotten...especially with adult learners! As far as I can ascertain, the Sentence Method (beginning with the sentence before breakdown) is the only one which truly encourages people to think in terms of wholes and ideas from the outset of their reading experience' ('The Genuine Sentence Method' 1976:81).

The author of the above article suggests starting with flashcards with pictures and a sentence to match on each. He used eight flashcards. All eight sentences were made up from different combinations of ten words. The next step would be to have the sentences on flashcards without the pictures. Then the pupils learn the ten words from flashcards and off the blackboard. After the student has been through these steps he goes on to books. The first book is easily read because it involves only the ten previously learned words and flashcard material. This gets the learner accustomed to handling a book while dealing with familiar words and sentences. The next two books are phonic primers and the last two deal with more difficult combinations in the language. How the primers are used would be more a matter of preference as far as I can see, but I think that starting reading with sentences on flashcards could be valuable in giving a head start before the students begin in primers.

After several tries at teaching a group of Warlpiri women to read we tried the sentence method described here. First they learned to read the eight sentences from a paper with a picture and the sentence below. Then they were to read the sentence without the picture. From this point they started using Breakthrough material. Each word from the eight sentences was put into a Breakthrough booklet. The student then was to make each of the eight sentences by pulling out the appropriate word and putting it into a rack which was provided. When they finished one sentence the words were then returned to the appropriate slot in the booklet. The next step was to make as many sentences as they could from the words in the booklet that were different from the original eight sentences.

When the women felt confident with this set of words we started on a new unit of eight pictures. We were also starting a phonics-type booklet to go along with each unit which would teach syllable sounds that were in the lesson. This has not been finished at the writing of this paper. We were seeing good results with this method with women that had had some previous education, even if it was minimal. I discovered, though, that the older women who had never attended school were in need of a lot of pre-reading before they were ready to start on any reading method.

4.2 'GUDSCHINSKY METHOD'

This method was especially designed by Sarah Gudschinsky for mother tongue teachers who have little or no formal teaching education. It is an easy method to get across and simple teacher's guides can be produced to go along with the primers. The method is actually eclectic, drawing from several methods. It starts with words and breaks them down into syllables. These syllables are then used to form words that the students have not seen in print before. This is done through the process of analogy.

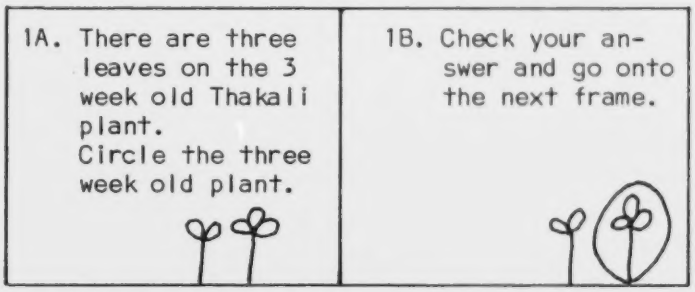
Many people, though, who have studied Aboriginal culture feel that Aborigines do not learn by analogy. Pam Harris, who has worked amongst the Warlpiris at Yuendumu, states: 'Thus it seems to me that, although one can argue as Gudschinsky did that "everybody learns by analogy", that is, has the innate capacity to learn by analogy, still it seems possible that the skill of learning by analogy could be less developed in the Aboriginal child beginning school than in children of some other cultures' (Harris 1977:129).

From the little we have used this method at Lajamanu, we have seen its drawbacks. A lot more activity-type exercises are needed with this method to aid in understanding and to keep the students' interest. Students also seem to do a lot of guessing with this method: they get the first part of the word correct but guess for the later syllables and suffixes.

4.3 PROGRAMMED INSTRUCTION

Thiagarajan in his book on programmed instruction says, 'The programmed instruction material is self instructional because it uses highly structured sequencing, small steps in presenting content, is self paced by the learner while providing him with knowledge of results and, therefore, reinforcements as he engages in the learning task' (Thiagarajan 1976:8). This helps semi-literates

take material on any subject and go through it on their own if it is written up in the programmed instruction format. 'This should be an important consideration for literacy workers who seldom work with adults in class groups for more than four to six months' (Thiagarajan, p. 8). Below is an example of the 'frames' used in the programmed instruction format. In the first part of the frame (1A), a question is asked or instructions are given. On the other side of the page or card is the correct answer (1B) so that after completing the box the person can see whether or not he is correct.


1A. There are three leaves on the 3 week old Thakali plant.
Circle the three week old plant.
1B. Check your answer and go onto the next frame.

The principles of programmed instruction are '(1) Learning should take place in small steps...(2) The learner should learn actively... The learner learns best by answering questions rather than reading and memorising the material...(3) The learner should check his answers immediately...(4) Learning should be from the simple to the complex...(5) The learner should learn at his own speed' (Thiagarajan, p. 18).

I think this method would be good for further reading practice, as an aid in comprehension, but I'm not sure it could be used in teaching reading because someone would have to get the learner started on the reading process.

I would like to try this method with the Warlpiris because it seems to be quite activity oriented. It would also allow them to learn independently and not be bound to the classroom setting (often unfamiliar and uncomfortable) or to a classroom pace. If they felt they were falling behind in the classroom they might quit, but with this method they wouldn't feel that pressure.

4.4 TRANSFER MATERIAL

The use of transfer material from English into Warlpiri might also be a good teaching technique. Many of the people at Lajamanu from five to forty years of age can read English. Their comprehension is limited and they do not read fast, but this previous English

reading experience may help them to read Warlpiri. Richards and Hudson (1977), in the Walmajarri transfer primers that they made, used three volumes. The first book 'is designed as a motivational volume. It includes natural stories, activity pages, and many illustrations. English and Walmajarri equivalents are given for all the sentences except those on the activity pages and the final story of each unit.' Book two 'is the instructional volume of the series where the symbols of the Walmajarri alphabet are taught,' and book three 'provides the reader with a number of illustrated, short natural stories in Walmajarri only' (Richards and Hudson 1979: preface).

These books are designed to be self teaching, but if help is needed, a literate person could aid the reader. I feel this type of primer might be profitable for Warlpiris who can read English. It would be self teaching and would avoid classroom situations with their problems of time and speed of learning. Classroom competition would be avoided and people might be encouraged to help each other learn.

4.5 USE OF CASSETTES

Cassettes could be used with many of the previously mentioned methods, aiding in self learning. They would also be a motivational factor since cassettes are quite popular amongst the Warlpiris.

Conrad Hurd writes in his article *On Joining the Cassette Set* (1976) that Navajos and Eskimos are independent types which like to learn on their own. This would apply to the Warlpiris too. Hurd goes on to say that when differences in rate of learning appeared in the classroom, the class ceased functioning. To get around this he started a cassette learning course. With the course came a cassette, writing paper, pencils and reading material. All instructions were given on the cassette so a person could go at his own speed and do it alone or with the group of his choice.

I see this as a valuable method of learning for the Warlpiris in terms of providing both activity and motivation. Many of them already have cassette players. Since storing material in their own homes for long periods can often be difficult, the cassettes and other materials could be kept in one location and borrowed as needed. For the Warlpiri people who attend church, hymns and scripture verses could be put on the cassettes and followed along in their reading material.

5. CONCLUSION

As teachers or trainers of teachers, we must first of all keep in mind what the students see as valuable. We can try all the methods in the world but if we never consult the learners as to what they see as valuable, then all of our enthusiasm will never break the literacy barrier. 'Education attempts many times fail because there is no correspondence between the foundation education attempts to lay, and what is really going on in Aboriginal life' (Wilson 1969: 132).

Wilson feels the teacher should help Aboriginal students draw out their strengths such as pride in their heritage, self esteem, patterns of mutual help and co-operation, and a strong sense of family and group identity. 'After this they can define what must be learned and what methods of learning will be necessary to reach the identified goals' (Wilson 1969: 135).

For many fluent readers in our society, books are entertaining and a source of knowledge. Culture breakdown has resulted in boredom and lethargy for many Warlpiri and other Aboriginal people. I would like to see Warlpiris sitting in the shade engrossed in books. I believe books could help fill leisure hours in a beneficial way. I feel that vernacular literacy in particular would restore a sense of pride and help the Warlpiri realise that their language is just as important as English. It must begin with the adults or it will not continue with the children.

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DEVELOPING A LITERATURE FOR KRIOL

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KRIOL - AN OVERVIEW

Kriol is a relatively new Aboriginal language spoken by more than 15,000 Aborigines in the north of Australia mainly in the pastoral districts from western Queensland to the coast of Western Australia.

Kriol speakers themselves most commonly refer to the language as 'pidgin'. In print it has been referred to as, among other things, 'pidgin'. 'Pidgin English', 'creole' and sometimes 'Aboriginal English'. Not everything referred to by these terms, however, is Kriol. Often a location name has been added as well, e.g. 'Roper Kriol', 'Bamyili Creole', 'Fitzroy Crossing Pidgin'.

Technically Kriol is not a pidgin; rather, it is a creole. Basically a pidgin is a relatively new language that is spoken by no one as their mother tongue and is restricted in structure, vocabulary and usage. A creole is also a relatively new language, but in contrast to pidgin it is the mother tongue of a group of people and is fully developed in its structure and vocabulary such that it can adequately meet all the communicative needs of its speakers within their social domain.

Because Kriol is related to English, it has often been considered by Europeans to be bad English that should be eradicated. Even in the 1970s school children were physically punished if caught speaking Kriol in school. Such negative attitudes have been instrumental in driving Kriol 'underground'. As a general rule Kriol is not spoken to, and in some cases even in the presence of, Europeans. Some Kriol speakers even deny that they speak Kriol because of the negative attitudes of Europeans.

The total number of Aborigines who speak Kriol is not known. Language surveys carried out by SIL indicate that more than 15,000 Aborigines actively use it as a main language of communication within their communities. Not all of these, however, speak Kriol as their mother tongue. Many speak it as a second language with a traditional Aboriginal language as their mother tongue. In some communities there are families with four generations who speak Kriol as their mother tongue. There are also some communities in which every Aboriginal school-child speaks Kriol as his or her mother tongue.

The historical roots of Kriol go back much further than four generations. They can be traced back to a pidgin that developed in the Sydney area in the late 18th century.

Kriol is not New Guinea Pidgin, though they are distantly related. Kriol is much more closely related to Cape York Creole/Torres Strait Pidgin. Kriol and CYC/TSP are different enough, however, to be considered separate but related languages.

Kriol is not Aboriginal English, though they are related. Aboriginal English is much closer in its structure to English than is Kriol. Some dialects of Aboriginal English have developed from the same historical pidgin that Kriol developed from. Some Aboriginal English, however, such as that spoken by many Kriol speakers themselves, derives from the speaker's imperfect approximations of English.

Kriol is not a restricted or deficient language that prevents full and meaningful communication. It does not prevent cognitive development nor cause intellectual breakdown. Rather, Kriol is fully capable of serving the educational and literary needs of its mother tongue speakers.

Kriol is being used in a bilingual school programme at Bamyili, NT. The children come to school speaking Kriol, not English. The school takes the cultural and language experiences that the children bring with them and builds upon them. During the infant grades the children are taught to read in their own language. Simultaneously oral English is taught. After they have learnt to read Kriol and speak English, their literacy skills are extended to include English. Both Kriol and English are used throughout the upper grades.

Kriol has not yet been utilised by the government in a widespread concerted effort to communicate with Aborigines. Several government departments have, however, made periodic use of Kriol. The Electoral Office is notable in this respect, having on several occasions produced posters and cassettes in Kriol in conjunction with elections.

KRIOL LITERATURE

Before the Bamyili Kriol bilingual programme was started, there were no published books in Kriol. Bamyili Press has since published over ten dozen Kriol books. These include general reading booklets, an English-to-Kriol transfer primer series and a 'literacy kit' that includes ten workbooks with graded story readers. In addition, over four dozen Kriol books have been published by the Summer Institute of Linguistics, Wycliffe Bible Translators, the Bible Society, the School of Australian Linguistics and others.

The School of Australian Linguistics at Batchelor, NT, offers training to Aborigines and Islanders in language-related subjects — linguistics, literacy, translation, interpreting. To date some four dozen Kriol speakers have studied with S.A.L. Though the emphasis is upon training, some materials have been produced by S.A.L. These include a fifteen-volume series entitled *Kriol Stories for Bilingual Situations* compiled by Gnani T. Perinpanayagam.

SIL, in co-operation with WBT, is undertaking the translation of the Bible into Kriol. To date the book of Ruth and selections from the Gospels have been produced, with chapters 1-25 of Genesis in draft form. In addition to actual translation of Scriptures, Bible stories, Sunday school activity sheets, Jungle Doctor comics and Bible story comics have also been produced. Most of these are published by the Bible Society in Australia.

Bamyili Community Church (Aborigines Inland Mission) produces a periodic Christian photo/newspaper in Kriol entitled *Olabat*, printed by Mission Publications of Australia.

Distribution channels for Kriol materials are still being developed. Though materials are available direct from the publishers, local outlets in regional centres are being sought. At present some Kriol materials are available locally:

Darwin, NT	-	SIL and the Bible Society
Bamyili, NT	-	Bamyili Community Church Bookstore and Bamyili School
Ngukurr, NT	-	St Matthew's Church Bookstore
Doomadgee, Qld	-	Brethren Bookstore

Kununurra, WA - Walkabout Shop

Wyndham, WA - Pastor Rodney Rivers, People's Church

Fitzroy Crossing, WA
- United Aborigines Mission

The Walkabout Shop, in addition to their store in Kununurra, has a mobile shop that travels throughout most of the western half of the Kriol-speaking area.

KRIOL ORTHOGRAPHY

The development of an orthography for Kriol was begun in 1973. The current orthography was selected by a majority decision of Kriol speakers who participated in a Kriol Writers Course in 1976. The course was a joint project of the School of Australian Linguistics, the Summer Institute of Linguistics and the Bamyili and Ngukurr Schools.

The orthography gives near maximum representation of significant sounds but allows for underdifferentiation in spelling. It is essentially phonemic but allows for variant pronunciations so writers can 'spell as they speak'. The name *Kriol* is 'creole' spelt in the orthography.

KRIOL RESEARCH

Until relatively recent times Kriol received little serious attention. In the research field Robert Hall was probably the first to give it attention. In 1943 he published a short paper on the language based on extracts in the writings of Phyllis Kaberry, who did her research in the Halls Creek area in the 1930s.

More recently Margaret Sharpe collected data on Kriol in the late 1960s incidental to her research on Alawa. In 1973 John Sandefur began a long-term study of Kriol, being joined by Joy Sandefur in 1976. Their continuing studies include an indepth description of the language and the compilation of a dictionary. They have recently produced a language-learning course for people wishing to learn to speak Kriol.

In 1974 Jill Fraser made a brief study of the Kriol spoken by young adults and children at Fitzroy Crossing, WA. The following year Margaret Steffensen made a brief study of Kriol at Bamyili. In 1976 Holt Thompson wrote an advanced diploma dissertation arguing for the use of Kriol in a bilingual programme at Bamyili. In 1979 Edward Murtagh did research for a Ph.D. thesis, comparing the

performance of school-children in the Bamyili Kriol bilingual programme with school-children in the Beswick, NT, English-only school programme. Dorothy Meehan, the teacher-linguist who has been responsible for co-ordinating the development of the school's bilingual curriculum and materials, has recorded the rationale behind the Kriol literacy programme in a dissertation for a graduate diploma. Research planned for 1981 includes Joyce Hudson's research for an M.A. thesis on the semantic structure of Kimberley Kriol and John Harris's research for a Ph.D. thesis on the historical development of Kriol.

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Items marked with an asterisk (*) were in stock and available for purchase from SIL in February 1981. For these or items published either by SIL or WBT, write:
Bookseller
SIL, PO Berrimah
Darwin NT 5788

Addresses for other publications listed:

Bamyili
PMB 25
Katherine NT 5780

Ngukurr-Roper River
via Katherine NT 5780

The Bible Society in Australia
PO Box 39061
Winnellie NT 5789

School of Australian Linguistics (S.A.L.)
Darwin Community College
PO Batchelor NT 5791

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Box 21
Lawson NSW 2783

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Perinpanayagam, Gnani T., comp. and ed. *Stories for Bi-lingual Situations*. S.A.L. (Stories in 3 booklets according to reading level, each booklet available in 4 different forms: stories-questions in Kriol-Kriol, Kriol-English, English-Kriol or English-English.)
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